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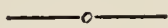
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TO OUR READERS.



MIDSUMMER arrived this year even before settled summer weather, and Rose show fixtures came round when at more than one time there was a dread there would be no Roses. In the spring the growth was all too forward, and it was feared the blooms would be "over;" after the terrible ordeal of the 20th of May it was equally feared they would not be "in" for the tournaments; yet so rapidly does Nature heal her wounds that Roses—fresh, welcome, and beautiful Roses—come to the shows that are now in brilliant progress.

To those of our friends who were scourged the most severely by the memorable frost we would wish to express our hope that the wounds were not so deep as they once seemed, and that they will not prevent a share in the triumphs of the season; to those who escaped being smitten we should like to offer our hearty congratulations. The world would be dreary without Roses, and those persons who persevere in their production add materially to the pleasures of life, and the delight of thousands who flock to admire the evidence of cultural skill as displayed in exhibitions. Our best wishes then to all Rosarians.

Last year at this time we were languishing under a tropical sun, and crops were exhausted by drought. Fields were brown, herbage scant, and Roses withering; now our fields are full of verdancy and Roses still unfolding. This is in part the compensation for previous adverse visitations. Most ardently do we hope that the future has in store compensation for recent losses in Strawberries and other fruits and crops that were ruined in a night.

One thought—or rather, we would say, one great historic fact, is always reassuring—difficulties bring out the best qualities of our race. We are glad to believe that this applies with full force to the horticultural community. Those who love gardening and find in it a healthy, wholesome, recreative pursuit, and those who engage in it as a means of livelihood, are ever pressing on in the endeavour to achieve greater results—to win, so far as it can be won by strenuous effort, the hoped for success.

To the attainment of success in gardening we delight in contributing the best that the best of helpers enable us to give in the form of guidance and encouragement—encouragement as conveyed in the records of honours won at shows, guidance as imparted by experienced practitioners.

May we ask of all who have aided us in completing another half-yearly volume the acceptance of our warm appreciation? Also may we express the hope that our readers everywhere will derive more and more satisfaction from the pursuit in which they engage—the noble yet gentle art of gardening?

INDEX.

- ABELIA RUPESTRIS, 77
Aberdeen, new park for, 495
Aberpergwm, South Wales, 86
Abutilon vitifolium, 463
Adiantum, farleyense, 136;
Clasianum, 481
Advice, questionable, 336, 357
African flowers, 5
Agave americana flowering, 449
Agricultural examinations
(University of Cambridge),
165
Allamandas, 433; A. Williamsi,
514
Amaryllises at Chelsea, 286
Amelanchier canadensis, 293
America, trade and weather in,
449
Ammonia, manufacturing, 451
Amygdalus communis and its
varieties, 384
Angelica culture, 270
Ants in ainery, 333
Antwerp Exhibition, 1894, 220,
342; a trip to, 388, 452, 502
Antwerp, banquet, printer's
humour, 407; a trip to, 388,
452; Mr. C. Van Geert's por-
trait, 452; a Dahlia discovery,
452; Calmpthout, 454; a trip
to—with reminiscences, 502
Aphides, destroying 352
Apples, Winter Majetin, 5;
sucker, the (Psylla Mali), 53;
Standard Bearer *versus*
Cobbam, 144; Golden Russet,
156; certificating, 165; moss
on trees, 192; late dessert,
192; grafting, 193; as medi-
cine, 204; Hambledon Deux
Ans, 356; imported (statist-
tics), 362; storing in pits,
446; late-keeping, 471;
Australian Apples in the
English market, 477; Ameri-
can export, 500
Apricots, pruning and training,
116; disbudding, 329; browned,
375; weevil, 525
Arboriculture, 262
Arrowroot, culture, 497
Artedia squamata, 282
Artichokes, Jerusalem, Chinese
and Globe, 229; Globe, 309
Arums, double spatbed, 231, 241
Ash v. Oak since the battle of
Waterloo, 344
Asparagus, seed sowing, 229;
planting, 251, 483; plinmosns
Sanderi, 244; manning and
protecting, 269; early, 279;
cutting, 309; from seeds,
449
Aspidistra leaves brown, 462
Aspleniums, hardy, 446
Asters for exhibition, 463
Athyrium filix-femina, varie-
ties of, 104
Auricula, a hybrid, 319; and
Primula Society (National)
Exhibition—southern sec-
tion, 323; at the Drill Hall,
336; at Manchester, 349;
treatment of, 410
Australian timber trees, 110
Ayrshire Horticultural Society,
9
Azaleas, fertilisers for, 119;
albicans, 207; repotting, 353;
Ghent, 369; bardy, 379; at
Kew, 385; repotting, 407;
Indian and Chinese, 422
- Beaumontia grandiflora su-
perba, 244
Beckenham Horticultural So-
ciety—Lecture on Primulas,
318
Bedding out, 417
Bedding plants at Hampton
Court, 344
Bees—Breeding, 17; can early
breeding be arrested? 17;
a Welsh bee farm, 17; comb
foundation, 39; and the
weather, 60; curing foul
brood, 80; bees for gardeners
and farmers, 80; feeding, 98;
the price of honey, 98; press-
ing honey, 118; bees and
fruit, 118; short stores, 136;
notes about, 156; summer
preparations, 173; founda-
tions, 173; notes on, the
apiary, 192; death of Mr.
Swords, 192; robber bees, 230;
trapping bees, 230; diseased,
250; preventing loss of
swarms, 250; bees and
flowers, 260; moving bees,
270; space over the combs,
270; a meeting of bee-keepers,
270; causes and signs of
swarming, 290; notes on,
211, 310, 439, 524; profit-
able bee-keeping—large or
small hives, 310; size of
hives, 332; fixing founda-
tions, 332; the Loughshire
storifying hive, 352; a suc-
cessful bee-keeper, 352; stamp-
ing sections and supers, 352;
improving the colour of
honey, 373; the weather and
bees, 396; early swarms, 396;
gathering honey, 396; chloric
dropsical fever, 439; brood
drawing, 439; why swarms
gather most honey, 440; the
weather and bees, 440; some
good honey, 461; bees and
the weather, 462; the size
of hives and large honey
yields, 462; supering, 495; the
restricted system, 484; the
Stewarton supers, 484; two
queens in one hive, 484;
Making cloths, 508;
naphtha, 508; premature kill-
ing of drones, 508; storing
honey, 524
Beetles, click, in a Tomato
house, 231; some friendly, 315
Beet, sowing, 309
Begonias, tuberous rooted,
sowing seeds, 79; from seed,
raising, 105; Gloire de Lor-
raine, 135; splitting tubers
of, 268
Belvoir Castle Gardens, ap-
pointment, 83
Bentley, Professor, death of, 9
Beurre, pronunciation of, 61
Bienulals from cuttings, 319
Birds and caterpillar mimicry,
160
Birds and green fly, 54
Birds, notes on, 125
Birminghams Amateur Gar-
deners' Association, 28, 71,
281, 497
Birmingham, spring show at,
210
Blossoming time, 274
Bone flour, steamed, 508; ana-
lysis of Clay's, 508
Bongardia Rauwolfi, 479, 495, 517
Bookham, notes from, 304
Books—"Ornamental Flower-
ing Trees and Shrubs," 115;
"Uses and Beauties of Trees,"
116; review of "Practical
Forestry," 208; "The Ama-
teur Orchid Cultivators'
Guide Book," 282; "Au-
- BOOKS—Continued.
Introduction to Structural
Botany," 319; review of
"Oliver's Natural History of
Plants," 415, (part 2), 450
Border, planting with bedding
plants, 119
Bordeaux mixture, 441
Botanic (Royal) Society, diffi-
culties of, 107, spring shows,
209, 308; summer show,
433
Bougainvillea glabra, 240, 488;
as a greenhouse plant, 184;
glabra, a fine, 448
Bournemouth, analysis of soil
at, 72
Bouvardias, culture of, 105;
old, treatment of, 441
Box edging, 40
Brassias, 467
British Honduras, products of,
50
Broccoli, Cape, 80; three good,
260; Liverpool notes, 318;
and Cabbages, 321; planting,
433
Browallia Jamesoni, 57, 77
Bruce Findlay, Mr., presen-
tation to, 69
Brunnissre (Browning) in
Vines, 518
Brussels Sprouts, Dwarf Gem,
68; decaying, 68
Buddleia globosa, 495
Bulbs and tubers, storage of,
90
Bulbs, how to make a good bed
of, 256
Bulfinches and trap cages, 49
Burlingtonias, 467
Butterflies, 30
- CABBAGES, A MINIATURE, 50;
Ellam's Dwarf, 280; early,
299; bolting, 321; good, 429;
inferior strains, 449; com-
petition in, 450; a variegated,
495
Calanthes deciduous, 7; culture
of C. Veitchi, 8; Baron
Schröder, 163; repotting de-
ciduous, 262
Calla, the black, 128
Callicarpa purpurea, 347
Calmpthout, 454
Camellias, buds falling, 40;
flowering outdoors, 109;
fertilisers for, 112; unhealthy,
174; outdoors, at St. Leonard's
Hill, 306
Cannas, dwarf, 451, 473
Carbolic acid and eelworm,
291
Cardiff Horticultural Society,
71
Carnations and Picotees, 410
Carnations, Marguerite, 9, 57;
Malmaisons, in winter and
spring, 102; Margaret, for
profit, 118; Malmaison, com-
post for, 137; Souvenir de la
Malmaison, origin of the,
180, 218; disease on Souvenir
de la Malmaison, 250, 286, 299;
Souvenir de la Malmaison,
springing, 327, 349, 367, 382,
433, 448, 473; Lady Nina
Balfour, 450; diseased, 499
Carrot fly and larvae, 397
Carrots, growing, 310
Caterpillars, mimicry, 160;
hybernated, 237; a flesh-
eating, 231
Catkin, what is a, 231
- Cattleyas, Loddiges, 207;
Lawrenceana, 422; Mossiae,
423
Canliflowers, 72; early, 59;
planting, 483
Ceanothus rigidus, 406; deu-
tatis, 472
Cedar trees, a forest of, 147
Celery, sowing, 191; culture of,
395
Celosia plumosa, culture of,
160
Centranthus ruber, 458
Ceratonia siliqua, 495
Cercidiphyllum japonicum,
472
Chamaepeuce dicantha, 333
Channel Islands, fruit and
flowers from, 128
Cbeal's, Messrs., annual exen-
sion, 504
Cherries, attention to, 211
Cherry blossom and sparrows,
280
Chestnut trees, decaying, 193
Chionodoxas, disease in, 293;
fungus, 321
Christmas flower market, 14;
Roses, 169
Chrysanthemum (National)
Society—Committee meeting,
76, 341; annual, 152
Chrysanthemums—Prize
money of N.C.S., 6; Canter-
bury Chrysanthemum Show,
date of, 6; Incorporated Japanese
Chrysanthemums at Read-
ing Show, 6; Mrs. L. C.
Madeira and Mrs. Jerome
Jones, 6; judging at Edin-
burgh, 6, 55; analysis, 1835-93,
21; Incorporated Japanese at
Reading Show, 32; judges and
judging, 32; judging at the
Edinburgh Show, 32; grow-
ing plants, 40; Mrs. L. C.
Madeira, 55; point judging,
55; rooting cuttings, 61;
Japanese up to date (Mr.
Molynex's election), 63;
judging at Edinburgh, 76;
Mrs. L. C. Madeira, 76;
useful, 76; stopping, 76, 206;
Croydon show, 93; judges
judged, 93; the Japanese
Chrysanthemum election
(voters' lists), 93; seed from
Portugal, 112; Mrs. L. C.
Madeira, 112, 133; Wolver-
hampton Chrysanthemum
Society, 112; Japanese Chrys-
anthemum election (voters'
lists), 113; Mrs. Alpheus
Hardy, 112; old and new 133;
In New Zealand, 134; Mrs. A.
Hardy, 134; the Japanese
Chrysanthemum election
(certificated varieties), 134;
the Japanese election (a
national trial wanted), 150;
stopping plants for timing
buds, 150; when should
Chrysanthemums be rooted?
150; old and new varieties,
151; packing Chrysanthem-
ums for long voyages, 163;
a great Chrysanthemum
trial, 163; Japanese Chrys-
anthemums election, 163;
Chrysanthemumiana, 168;
Highgate and district society,
188; stopping new varieties,
188; Mrs. Alpheus Hardy, 188;
Chrysanthemumming, 188;
rooting cuttings and stop-
ping plants, 183; N.C.S. com-
mittee meeting, cuttings
damping, 193; Japanese
Chrysanthemum election,
224; National trial of varie-
ties, 224; Mrs. A. Hardy, 224;
new continental Chrysanthem-
- CHRYSANTHEMUMS—Contd.
raum for 1894, 224; M. F.
Delaux and Madame Simon
Delaux, death of, 245; novel-
ties in Chrysanthemums, 245;
stopping Chrysanthemums
for timing the blooms, 245;
the N.C.S. report and
schedule, 266; arranging
Chrysanthemums, 263; group-
ing, 263; Mrs. Alpheus
Hardy, 266; list of dwarf
kinds wanted, 277; Mrs.
Alpheus Hardy, 277; canons
of Chrysanthemum judging,
277; for large blooms, 311;
Mlle. Marie Cordonnier, 301;
Italian, 301; old and new,
301; Mr. Molyneux's book,
301; list of dwarf varieties,
301; canons of judging—
attributes, 301; coddling, 340;
Japanese Chrysanthemum
election (introduction, dates
of new varieties), 341; cod-
dling 368; presentation to Mr.
Jukes, 368; canons of judg-
ing, 368; C. Coronarium
Princess May and Duke of
York, 362; coddling, 381;
N.C.S. and judging, 381;
judging blooms, 381, 513; in
Japan, 412, 425; judging,
Show in May (Port Eliza-
beth), 412; show of, at
Auckland, New Zealand, 426;
green, 457, 474; bush plants
in Scotland, 474; on walls,
474; Mr. T. H. Spaulding,
497; a Belgian Chrysanthem-
um catalogue, 497; N.C.S.
of America, 497; a Japanese
nursery in America, 497;
Chrysanthemum salad, 497;
a black, 513; American and
English, 513
Chysis bracteata, 244, 262
Citric acid, new process for
making, 240
Citrus trifoliata, 202
Clay's fertilisers, analysis of,
538
Clematises, about, 189; mou-
tana, 319
Cleome heptaphylla, 18
Clibran's, Messrs., a visit to,
107
Climbers, sweet scented, for
conservatory, 174; stove and
greenhouse, 234; and build-
ings, 300
Climbing plants, 169
Clivias, Hillingdon variety,
207; at Forest Hill, 246
Cologne cristata, 125; Mossiae,
207, 364; Swaniana, 337
Coffee, in Mexico, 33; estates
in Angola, 451
Colchester Show, 506
Coleus Mrs. F. Sander, 207
Committees, liabilities of mem-
bers of, 220
Commons, preservation of, 9
Conifers, top dressing at Drop-
more, 75
Conservatory pillar plants,
221
Cornus brachypoda variegata
129; florida, 453
Coryanthes macrantha, 219
Costus igneus, 30
Cottage farm, Sulhampstead,
458
Criticism the critics, 12, 56
Crocus minimus, 145
Crotons in winter, 26
Crystal Palace, proposed Fruit
Show at, 257; Spring Show,
227; Fruit Show, 279; Sum-
mer Show, 371; and the
R.H.S. Autumn Show, 494
Cuckoo, the, 279; early, 384

BASKET MAKING, 49
Beans, preserving 103; forcing
French, 3 4

Cucumbers, raising plants in frames, 78; temperature for, 191; Tree, the, 231; seeds, fertilising, 266, 291; progress, 385; plants and eelworm, phenyle remedy, 418; growing, 489.
Cultivation, the origin of, 383.
Currant bud bite, increase of, 199; the, 297, 440, 471.
Currants, pruning, 78.
Custard Apple, 452.
Cyclamens, seedling, 213; growing, 332.
Cynoches chlorochilon, 423.
Cymbidium Traceyannum, 163.
Cypripediums, Fairieano-Lawrencianum, 45; Ad astus, 103; some fine, 181; Ashworthae, 197; Winifred Hollington, 295; Annie Mesnres, 337; macrochilum gigantea, 381; callosum Sanderæ, 422.
Cytisus Adami (two-coloured), 451.

DAFFODILS, THE TENBY, 154; and dry summers, 201; cultivation of, 220; at Long Ditton, 265; in dry summers, 259; and the weather, 232; destroyed by hailstones in Ireland, 320; Daffodils, 361; green-tinted, 362.
Dahlia (National) Society, annual meeting, 149; report, 472.
Dahlias, analysis, 1883-1893, 215; Henry Patrick, 260.
Daisies on lawns, 462.
Damson culture in Staffordshire, 359.
Daphne Cneorum majus, 361.
Darwin, Charles, memorial to, 108.
Dean, Mr. William, proposed testimonial to, 298.
De Candolle prize, 127.
Dendrobium, atro-violaceum, 65; Bensoniæ, 125; Barbatulum, 197; Cybele, Sibyl, and Virginiana, 207; after flowering, 213; Phætopsis Schöderianum, 242; Enryalms, 244; D. superbum Huttoni, 244, 273; superbum, 296; Euryalus, 322; Dellese, 336; D. Sanderianum, 445; D. glomeratum, 445; Nigro-hirsute, 467.
Dentzia gracilis, old plants of, 136.
Devon and Exeter Gardeners' Association, 30.
Digging competition, 496.
Digitalis canariensis, 384.
Dipladenia belvisensis, 146.
Disbanding, about, 24.
Dry summers, 299.
Dublio, juttings from, 13; view in Stephen's Green, 475.
Duffin House, fruits at, 72.
Dundee Horticultural Association, 185.
Dulwich Park in spring, 326.
Durmatobotrys Saundersi, 148.

EARL'S COURT EXHIBITIONS and the prize money, 9, 137, 242; prize money—an appeal to Mr. H. Turner, 69.

Earthworms in California, 109.
Earwigs, the latest about, 68.
East Lothian garden in 1893, an, 4.

Economical manuring, 489.
Edelweiss, artificial, 343.
Edworthia chrysanthi, 232.
Edgings and walks, garden, 85.
Eelworm and carbonic acid, 291; infesting winter Spinach, 291; in Onions, 485.
Elæocarpus serratus, 333.
Embothrium coccineum, 343.
Epacris, culture of, 509.
Epidendrum Ellisi, 322.
Eucalyptus rostrata, 478.
Encharis, L. W., 111; at Allerton Priory, 504.
Enphorbia, notes on, 12; (Poinsettia) pulcherrima, notes on, 35.
Evergreen, 196.
Exhibiting hardy flowers, 161.
Exhibition, a novel, 9.

FARM—PIGS AND BACON, 41; work on the home farm, 41, 20, 62, 82, 100, 120, 133, 176, 158, 194, 214, 232, 252, 272, 292, 312, 334, 354, 376, 412, 464, 486, 500.
Fertilisers and Feeding Stuffs Act, 1893, 41; unprofitable live stock, 20; poultry fattening, 63; dairy utensils, 62; the turn of the tide, 81; pickle for ham, 82; mixed farming, 99; feeding poultry, 100; poor pasture, 119; nitrogenous manures, 138; potash, 175; manure for pasture, 176; keeping hams and bacon, 176; low price of corn, 176; Galloways, 157;

FARM—Continued.
curing hams and bacon, 158; protection, 194; the farmer's fowl, 214; swine fever, 232; lessons of the drought, 232; fodder crops, 271; food crops, 292; lame horse, 292; provision for winter, 312; mixed farming, 334; green crops for sheep, 353; butter failure, 354 farm crops, 376; small holdings, 397; profitable produce, 419; tillage, 441; haymaking, 464; changing agriculture, 486; plant food, 510; changing agriculture, 526.
Fernery at Imoney, 53.
Ferns, British decorative, 6, 237; decorative British (Hartstongue), 32; grubs at the roots of, 99; on walls, 86; decorative British (the Lady Fern), 104; the Buckler Ferns, 237; treatment of, 231; from spores, hardy, 157; decorative British, 317; the Shield Ferns, 317; decorative British (Aspleniums), 446; decorative British, propagation, 508.
Fertilisers and Feeding Stuffs Act, 1893, 41.
Fertilisers for small fruits, 83; for Azalea and Camellias, 119; for Cucumbers, 291.
Figs, forcing, 211, 172, 394; casting their fruit, 174; spotted, 374; about, 438.
Filberts, pruning, 172.
Floral facts and fancies, 339, 468.
Florists' flowers, hints on, 410.
Flower beds, simple and effective, 265.
Flower garden, 78, 155, 373; in, 268, 321; gardening, 335.
Flowering trees and shrubs, early, 363; naturalising, 489; packing, 508.
Flowers, old-fashioned, 122; for cutting, 157; hardy, exhibiting, 187; cut, exhibiting, (twelve varieties dissimilar), 226; hardy notes on, 298; at Holloway 305; preparing and packing, 435; hardy in June, 511; in Covent Garden, 512.
Forestry, Mr. Webster's book on, 208.
Fowl manure for fruit trees, 99.
Foxglove, abnormal, 484.
Fritillaria aurea, 357.
Frost, severe, 29; and damage to crops, 414, 431.
Fruit, culture, remarks on criticising, 12; forcing, 15, 38, 59, 78, 97, 116, 135, 154, 172, 190, 228, 249, 268, 289, 330, 350, 372, 394, 438, 461, 481, 507; supply, the (market trees), 4; at Duffin House, 72; product in the United States, 71; Woburn experimental station, 195; trees on wall, protecting, 210; planting, 210; pruning, 210; Exhibition at Crystal Palace, rumour of, 220, 240; Show (proposed) at the Crystal Palace, 256; propositions on, 276; acreage in England, 261; South African, 261; supply, the, 356; ripening and preservation, 380; imported in April, 343; stamping foreign, 385; supply and demand, 406; thinning, 416; the law on selling unsonnd, 426; tree pest in Cornwall, 427; ripening and preservation of, 456, 504.
Fruit Culture Society, National, 245.
Fruiters' Company and the Agricultural Department, 90.
Fruit trees, on walls, winter dressing, 55; stunted, 278; protecting espaliers, 289; and liquid manure, 302; prospects and the weather, 308; forcing, 308; insects on, 457, 460; mulching, 430; watering, 460; syringing, 469; summer pruning, 506.
Fungus, on Orange trees, 19; on Grapes a beneficial, 30.

GALEOPSIS DUBIA, 349.

Galvaised wire (Peaches and Nectarines), 164; for fruit trees, 187.

Gardeners' acquisitions, 199.

Gardeners' Association, 49.

Gardeners' holidays, 43, 93.

Gardeners' Royal Benevolent Institution, 9; annual meeting, 58; annual friendly supper, 75; annual dinner, 513.

Gardeners' (Royal) Orphan Fund, 8, 139, 188; annual general meeting and election of candidates, 26; subscription list, 318; annual dinner, 392.

Gardeners, the position and prospects of, 470.

Gardening, common, 162; ornamental, 296.

Garden produce in 1893, prices of, 67.

Garden walks and edgings, 86, 123, 392.

Garden walls, thatch on, 147.
George, Mr. E., death of, 89.
Genistas, raising from seed, 213.
Ghent, flower show at, 28.
Gibson testimonial fund, 361.

Gipsy moth, the, 71.
Gladoli, planting, 144; notes on, 353, 425.

Gladoli, corms, cutting, 212; in Scotland, the, 255, 274; ramosus, 517.

Glasnevin Botanic Gardens, 14.
Glass structures on wheels, 413.

Glory of the Snow, 199.
Gloxinia, the hybrid, 383.

Glycyrrhiza glabra (the Liquorice plant), 450.
Gomphia decora, 15.

Gooseberry buds, preserving, 78; caterpillar, the, 447.
Gooseberry bushes in February red spider on, 169, 184; caterpillars on, 174, 447.

Grafting wax, 81; Paradise stock, 230.

Granite scrapings, 147; for walks, 165.

Grapes, facts about, 101; facts about (Madresfield Court), 142, 180; a beneficial fungus on, shanking, 170; money in, 165; Black Hamburg varieties, 180; Muscat, setting, 297; and plants used, 374; Australian, 388; Gros Maroc, 378, 448; South African, 383; Gros Maroc and Cooper's Black, 413; shanked, causes and prevention, 419; seedless, 473; treatment of, 472; scalding, 482; Hamburgs deficient of bloom, 485; spot on, 485; packing, 508; Muscats scalded, 509; stoning and swelling, 523.

Green fly on Gooseberries, 375.

Grass seeds, sowing, 174.
Graveley, Dr., death of, 48.

Greenland, the flora of, 10.
Greenhouses, iron doors for, 109.

Guano, origin of, 109; native, experiences with, 128.

Guernsey, notes in, 338; impressions of, 356.

HEMANTHUS LINDENI, 72.

Hailstones, large, 495.

Half hours with great authors, 44; (the twin aspects of culture), 123.

Ham, notes from, 235.
Hardy flower notes, 25, 274, 377, 443, 511.

Hardy flowers, in February, 140; list of, for exhibition, 152; exhibiting, 161, 241; Hardy fruit garden, 38, 78, 116, 172, 240, 289, 329, 371, 460.

Harrison, Mr. F., presentation to, 222.

Harts-tongue Fern, 32.
Hawkesyard specimen plants the, 367.

Head, proposed testimonial to Mr. W. G., 405.

Hederas—Choice, 209; H. helix-tessellata, 20.
Heliotropes at Coombe Warren, 90.

Helleboms niger, 83.
Hibbertia dentata, 202.

Hilton, Dundrum, 222.
Holloway, flowers at, 35.

Hooker's "Icones Plantarum," 320.
Horseradish, 182.

Horticultural buildings, 64.
Horticultural Club, 69; annual dinner, 148.

Horticultural Societies, Congress of, 71.

Horticultural (Royal) Society Committees, 47, 130, 206, 206, 242, 287, 324, 370, 479, 515; names of Committeemen, 36; certificates and awards, 48, 131, 244, 288, 325, 370, 481, 516; Council of, 48; lectures at the Drill Hall in 1894, 52; annual general meeting, 151; report of the Council for 1893-4, 132; Scientific Committee, 152, 226, 306, 413, 498; working students at Chiswick, 146; lecture on Arnold Arboretum, 244; and the Crystal Palace, 256; examination, 259; lecture on hybrid Narcissus, 288; Fruit Show at Crystal Palace, 279; lecture on botanical exploration in Borneo, 326; examinations in horticulture (centre-), 318; summer Show, 400; lecture on flowering trees and shrubs, 481; the R.H.S. Show at the Crystal Palace, 494.

Horticulture, examinations in, 166; omission of text books, 166; in (centres), 318; resources, our, 471.

Hyacinths, Show at Haarlem, 222; a profliferous, 255; casting flower spikes, 270.

IMPATIENS DURICOMA (NEW), 71.

Impney, fernery at, 53; appointment at, 279.

Indiarubber plants, propagating, 14.

In our decoration, hints on, 25.

Ingram, Mr. W., death of, 48.

Injurious Insects, Miss E. A. Ormeod's report, 247.

Insects, attacks on crops and trees, 52; preventing the importations of injurious, 260; on fruit trees, 447, 457; remedies, 461; snapper, an, 479.

International Horticultural Exhibition, 182.

Ipomæa Woodi, 320.

Ireland, a retrospect of the past year in, 2; Royal Horticultural Society of, 96; Violets in, 128; early bulbous plants in, 128; Royal Horticultural Society's spring show, 347.

Irises, Rosenbachiana, 189; Kämpferi, 204; Sindjarensis, 227; reticulata, 221; Helena, 302; for market, 524.

Irish garden, April notes from, 314.

Iron doors for glass structures, 145.

Ivies choice, 209; at Kew, 385.

Ivy on church walls, 261.

JAPAN. LECTURES ON TREES and shrubs of, 207.

Judas Tree, 352.
Judging Chrysanthemums, 277.

Justicia flavicoma, 108; calytricha, culture of, 311.

KER'S, MESSRS, NOTES AT, 284.
Kew Gardens, visitors to in 1893, 89; presentation of dried plants to, 129; structural improvements at, 148; gardens, 319.

Kew Guild, the, 385.

Kitchen garden, the, 16, 59, work in, 135, 229, 269, 351, 395, 439, 482, 523.

Knowsley Hall Gardens, appointment, 69.

LABURNUMS, VAGARIES IN (two coloured), 451.

Lady gardeners, 165.
Læia anceps Ashworthiana, 125; superbiens, 207.

Lælio-Cattleya Nysa, 31; Hon. Mrs. Astor, 141; Tydea, 181.

Landscapes, 152.
Lapageria alba seeding, 28; unhealthy, 19.

Lathyrus tuberosus, 428.
Lawn mowers, 257.

Lawns, Daisies on, 462; eradicating worms from, 484.

Lawn tennis court, making, 193.

Leaves, feeding value of, 71.
Leiophyllum buxifolium, 496.

Lenten Roses, 238.
Leschenautia biloba major, 347.

Lessons for young gardeners, 283, 278.

Leucoliums, 121.
Leucophyton Browni, propagating, 291.

Libonia floribunda, 14.
Lilacs for forcing, 70.

Liliums, auratum bulbs, 99; longiflorum, 353; candidum diseased, 498.

Lily, a gigantic, 49.
Lily of the Valley, forcing, 52; (Fortin var.), 127; in woods, 221; after forcing, 369; maggots on, 332.

Linarias, notes on, 411.
Linden tree, the, 343.

Linum arboreum, 327.
Liquorice plant, the (Glycyrrhiza glabra), 450.

Liverpool notes, Broccoli, 318; Liverpool Horticultural Association, 318; Pyrus japonica, 318; notes, 369.

Lobb, Mr., death of, 406.
Lobelia increasing, 291.

London trees, 298.
Looking ahead, 139.

Loropetalum chinense, 207, 235.
Lycaste Skinneri Mrs. H. Ballantine, 207; costata, 467.

MAGNOLIA STELLATA, 30.
Manchester, flower shows at, 70; Whit-tide Show, 393.

Manures, chemical, world's annual consumption of, 239; chemical, effects of, 442.

Manuring ornamental trees and shrubs, 66; economical, 489.

Marguerite, the blue, 222.
Marianthus Drummondianus, 307.

Marigolds for exhibition, 463.
Market gardening, in Cornwall, 108; industry, the, a review, 189; Compensation Bill, 361; gardeners, 369; plant and flower, 449.

Masdevallias, pusilla, 45; gargantua, 207, 283.

Mealy bug, exterminating, 303.
Melons, sowing, 15; early, in pits and frames, 117; attention to, 191; culture of, 417, 507; culture in frames, 466; Eclipse, 494.

Meteorological (Royal) Society, 77, 321; exhibition at, 300.

Meteorology in relation to hygiene, lectures on, 280.

Meyenia erecta, 37.
Microbes, a new use for, 183; in the soil, 344.

Mistletoe berries on Apple trees, inserting, 61.

Mulching outside Vine borders, 85.

Mushrooms, early field, 88; on the moors, 148; for the million, 297; early, 342; spawn, artificial production, 428.

Mtisia Clematis, 134.

NARCISSUS, TELAMONIUS, plenus, forcing, 88, 107, 124, 163; Snowflake, 108; N. lobularis, 154; Telamonius plenus, 170; hybrid, lecture on, 288; poeticon ornatus, 285; Wear-dale Perfection, 303; poeticon ornatus, 298; Exhibition at Birmingham, 327; Sir Watkin, 344; poeticon, Horace, 404; for forcing, 525.

Nasturtiums for salads, 202.
Naturalising flowers, 489.

Nicotiana affinis, 148.
Nitrate of soda and Thomas' phosphate or basic slag, mixing, 192.

Nectarine branches, fungus (Corynem Beijerinckii) on, 89.

Newcastle spring and summer shows, dates of, 221.

Nodules on roots of French Beans, 271.

Nonagenarian gardener, a, 221.
Notes from Bookham, 304.

Nottingham Natural History Museum, plants at, 72.

Nursery and Seed Trades Association, the, 427.

Nutrition of roots, the, 838, 408, 424, 444, 463, 489, 512.

Nymphæa Parkeriana, 450.

OAK v. ASH SINCE THE BATTLE of Waterloo, 344.

Odontoglossums, excellens chrysomelanum, 207; crispum nobilis, 423; crispum Baroness Schröder, 490.

Old Year and the New, the, 1.
Oleander, scale on, 213.

Olearia stellaria, 369.
Oncidium curtum, 7; splendendum, 296; tetrapetalum, 422.

Onions, maggot, mastering the, an appeal, 159, 173, 198, 217, 235; sowing, 191; culture and mastering the maggot, 254; experiments at Warminster, 258; sowing with Carrots, 260; maggot, the, 294, 342; maggot, mastering the, a review, 323; importations of, 383; maggot, American remedy, 449; diseased, 485; Phytomyia alii, 485; eelworm in Onions, 485; good keeping, 494.

Ophiopogon japonicus, 51.
Oranges, culture in California, 88; American, 183; Jaffa, the, 307; absorption of odoriferous vapours by, 348; trees, grafting, 484.

Orchards, damage to, 447.
Orchid—Oncidium curtum, 7; Zygopetalum rostratum, 7; deciduous Calanthes, 7; culture of Calanthe Veitchi, 7; Lælio-Cattleya Nysa, 31; lessons for young gardeners (roots and their requirements), 31; Cypripedium Fairieano-Lawencianum, 45; Masdevallia pusilla, 45; Trichocentrum albiflorum, 45; Oncidium Sanderianum, 45; Denrobium atro violaceum, 65; Oncidium ornithorhynchum, 66; Polystachya Buchananii, 66; Cyrtopora papillosa, 66; Sobralia unmla, 66; a new Orchid book (Burberry's), 87; Oncidium Gravesianum, 87; Saccolabium celeste, 87; Orchid weevil, 84; Cypripedium Adrastus, 103; Pleurothallis unistriata, 103; Scaphosepalum microdactylum, 103; Paphinia grandiflora,

ORCHIDS—Continued.

101; *Lælia anceps* Ashworthiana, 125; *Ceoloxyne cristata*, 125; *Dendrobium Ben-onia*, 125; in February, 141; *Lælia Cattleya* Hon. Mrs. Astor, 141; *Calanthe Baron Schröder*, Cymbidium Tracey-anum, 143; at Roselands, Teddington, 163; some fine *Cypripediums*, 131; *Lælia Cattleya Tydea*, 181; at Liverpool, in Northumberland, 197; comest for, 213; *Phaius Marthæ*, 219; *Coryanthes macrantha*, 219; Orchids near towns, 219; newly imported 242; R.H.S. Orchid Committee, 262; *Chysis bracteata*, 262; repotting deciduous *Calanthes*, 262; *Oncidium Marshallianum*, 263; *Dendrobium superbum* Huttoni, 282; culture notes, 282; *Masdevallia gargantua*, 282; Orchids at Chelsea, 282; "The Amateur Orchid Cultivators' Guide Book," 283; at Westminster, 295; *Cypripedium Winifred Hollington*, 295; *Dendrobium superbum*, 295; *Oncidium splendens*, 295; *Scutellaria Steeli*, 296; *Stanhopeas*, 296; *Dendrobium Enryalis*, 322; *Epidendrum Ellisii*, 322; "Census Orchid-culture," 322; *Bletia hyacinthina*, 322; *Phalaenopsis culture*, 322; Orchids at Salisbury, 322; Orchids at Rodwell Hall, 322; jottings, 337; *Ceoloxyne Swainiana*, 337; *Lælia cinnabarina*, 337; *Dendrobium noble*, Smee's var., 337; *Cypripedium Annie Measures*, 337; *Sobralia sessilis* (true), 338; *Cirrhopetalum robustum*, 338; *Oncoglossum Cervantesi*, 338; *Vanda swavis*, 338; in pits and frames, 338; *Ceoloxyne Mossiae*, 364; cultural notes, 364; Orchids at Chelsea (Mr. Bull's), 364; *Dendrobium Delense*, 386; *Cypripedium macrochilum giganteum*, 386; Orchid jottings, 386; *Grammatophyllum Gnietimi* H., 386; *Pickering Lodge sale*, 386; *Epidendrum nemorale majus*, 386; small collection of Orchids, 386; *Cattleya citrina*, 386; *Oncoglossum crispum Sanderæ*, 408; Orchids at Manchester Show, 408; at Barford Hill, Warwick, 408; hints about Warszewiczias, 408; an amateur Orchid grower's dream, 408; *Cypripedium callosum Sanderæ*, 422; *Cattleya Lawrenceana*, 422; *C. Mossiae*, 423; *Cycnoches chlorocaulon*, 423; notes and comments on the Orchid at the Temple Show, 423; *Phaius Owenianus*, 445; *Cattleya Walkeriana*, 445; *Plenrothallis inflata*, 445; *Dendrobium Sanderianum*, 445; *D. glomeratum*, 445; cultural notes on Orchids, 445; *Lycaste costata*, 457; *nigro-hirsute* *Dendrobiums*, 467; *Brassias*, 467; *Burlingtonias*, 467; at Fair Oak Lodge, 490; at Westmount, Kelvinside, Glasgow, 490; Orchid jottings, 490, 514; *Oncoglossum crispum* Baroness Schröder, 490; British Orchids, 491.

Orchid tnos, varnishing, 18

Osmunda regalis at Hendre-folian, 27

Over-production, 313

Oxalis crenata as a vegetable, 261

PACHYSTOMA SPECIOSUM, 197
Pancratium, treatment of, 166
Pansies, the price of new, 53, 69, 96; propagating, 410
Pansy Show (Midland) at Tamworth, 460
Pansy and Viola Show at Westminster, 478; Scottish Society's Show, 522
Paris-green for winter moth, 270
Path, gravel, "scum" on, 441
Pantownia imperialis, 473
Peach and Pear leaves blistered, 441
Peaches, buds falling, 251; forcing, 417
Peaches and Nectarines, 15; forcing, 210; at H.M., 285; Violet Hative (grafted), 449
Pears, cracking, *Beurc Die*, 35; tree scale, 60; and their culture, 92; the best, 122; *Beurc Rance*, 258; *Bergamotte Esperen*, 260; leaves blistered, 310; buds falling, 375
Pear and Plums for a wall case, 441
Peas, Sweet, travelling, 71; sowing, 310; Sweet, in April, 299; early, 185

Peat moss litter as manure, 450
Peckham Rye Park, 391
Pelargonium, winter flowering, 19; potting and bedding, 66; Ivy-leaved, at Coombe Warren, 90; golden and silver variegated, 127; for winter flowering, Zonal, 276; Ivy-leaved, 469
Pepper cultivation, 110
Pepper Tree, the, 496
Péradeniya Botanic Gardens, 280
Petroleum, as an insecticide for Melons and Cucumbers, 88, 110, 127; soluble, 128
Petunias in pots, 98
Phaius, Marthæ, 207, 219; Owenianus, 445
Phalaenopsis Vesta, 207; culture, 322
Phlox canadensis (divaricata), 503
Phoenix Park, 14
Phrynum variegatum, 27, 50
Pleris (*Andromeda*) japonica, 259
Pines, potting, 211; measurement of white, 451
Pinks, hybrid, 179; Pink Homer, 495
Pink Shows, 448; Southern, 478, 523
Pink Society, southern, 220
Planetrees, blight on, 434
Plant food in soils, 501
Plant houses, 16; work in, 97, 117, 155, 301, 483

PLANTS, FRUITS, AND VEGETABLES CERTIFICATED BY THE ROYAL HORTICULTURAL SOCIETY—

Adiantum tenellum, 325; *A. Schneideri*, 325; *A. Clavatum*, 403; *A. maculatum Schröderi*, 481; *Alcacia Watsoniana*, 325; *Alpinia nutans*, 325; *Alsophila Marshalliana*, 403; *Alstomeria peregrina alba*, 370, 403; *Amaryllis Major Wilson*, 131; *A. Novelty*, 244; *A. Olympia*, 244; *A. Holloway Belle*, 258; *A. speculum*, 234; *A. Gem*, 326; *Amygdalus persica* var. *magnifica*, 131; *Anemone St. Brigid*, 283; *Angraecum Fournierianum*, 516; *Angioa Clowesi*, 481; *Anthriscum Scherzerianum atropurpureum*, 244; *Apple*, *Oakland's Seedling*, 404; *Arisema fimbriata*, 481; *Asplenium Brieryi*, 403; *A. lucidum*, 403; *A. Mayi*, 403; *Athyrium f. f. Frizellæ coronare*, 403; *Atragene alpina*, 288; *Aquilegia Stuarti*, 370; *Azalea albicans*, 207; *A. Mr. Victor Savart*, 325; *A. Lively*, 325; *A. Julia Vervaeke*, 325; *A. Perle de Ledeborg*, 325. — *Beaumontia grandiflora superba*, 244; *Bifrenaria tyrianthina*, 481; *Begonia Lord Milton*, 370; *B. platanifolia* var. *illustris*, 403; *B. platanifolia decora*, 403; *B. Lady Theodore Guest*, 403; *B. Marchioness of Salisbury*, 403; *B. Sunlight*, 403; *B. Rosette*, 481; *B. Earl of Craven*, 481; *B. Duchess of Northumberland*, 481; *B. Colossus*, 481; *B. Rev. T. G. Little*, 481; *B. Miss Thompson*, 481; *B. Miss Falconer*, 481; *B. Mary Cornell*, 481; *B. Dr. Nansen*, 516; *B. H. J. Infield*, 516; *Bougainvillea glabra Sanderiana*, 325; *Brassia Lawrenceana*, 288; *Browallia speciosa major*, 481. — *Calanthe Bryan*, 48; *C. Phala-Arnoldia*, 48; *C. Florence*, 48; *C. William Murray*, 48; *C. Baron Schröder*, 131; *Caladium Gaspard Crayer*, 244; *C. Assungny*, 403; *C. Baronne Claret de Hirsch*, 403; *Camellia Exquisite*, 131; *Canna L. E. Bailey*, 288; *C. Che-hunt Yellow*, 325; *Carnation Sir Henry Calcraft*, 48; *C. John Peter Rngus*, 48; *C. Mrs. Everard Hambro*, 481; *C. Duchess of Fife*, 481; *C. Primrose Dame*, 481; *C. Duke of York*, 481; *C. Duchess of Devonshire*, 481; *C. Mrs. F. A. Bevan*, 516; *C. James O'Brien*, 516; *C. Crinnin capensis*, 370; *Cattleya Loddigesii*, 207; *C. Mendell Lewis*, 403; *C. Mendell Mrs. De Barri Crawshaw*, 403; *C. Mossiae imperialis*, 403; *C. Mendell picta*, 403; *C. Mossiae Mrs. R. J. Measures*, 481; *C. Mossiae alba*, Pitt's variety, 481; *Chysis bracteata*, 244; *Clematis Countess of Onslow*, 516; *Clivia miniata*, Hillingdon variety, 207; *Ceoloxyne Mossiae*, 207; *C. Swainiana*, 325; *Coleus Mrs. F. Sander*, 207; *C. Empress of India*, 403; *Croton Mayi*, 516; *Coryanthes Wolfiana*, 370; *Cucumber Progress*, 370; *Cyathea Masteriana*, 403; *C. pygmaea*, 403; *Cyclamen*

PLANTS, &C. CERTIFICATED—Continued.

Sultan, 131; *Cypripedium Acastus*, 48; *C. Morgania langleyense*, 48; *C. Godseffianum*, 131; *C. Fraseri*, 131; *C. Captain Lendy*, 131; *C. Winifred Hollington*, 283; *C. Mastersianum*, 283; *C. Annie Measures*, 326; *C. macrochilum giganteum*, 370; *C. belatnium*, Hardy's variety, 403; *C. callosum Sanderæ*, 403; *C. Leysenianum*, 516. — *Datura chlorantha*, 403; *Delphinium Alfred Henderson*, 481; *Dendrobium atro-violaceum*, 48; *D. Hebe*, 48; *D. Cybele*, 207; *D. Sibyl*, 207; *D. Virginia*, 207; *D. Enryalis*, 244; *D. superbum Huttoni*, 244; *D. crepidatum*, Tring variety, 238; *D. Aleippe*, 288; *D. capilliplo*, 283; *D. nobile*, Smee's var., 325; *D. Dellenæ*, 370; *D. nobile* var. *Schröderiana*, 370; *D. cretaecum*, 370; *D. veratrifolium*, 481; *D. Griberti*, 481; *Disa laugleyensis*, 370; *Dracæna Barroni*, 131; *D. Princess May*, 131; *D. De Smetiana*, 370; *D. Durrandi*, 516. — *Epidendrum Ellisii*, 283; *E. radicans*, 325; *Eulophiella Elizabethæ*, 283; *Exochorda Alberti*, 326. — *Fagus rotundifolia*, 481; *Forsythia intermedia*, 244; *Fuchsia Princess May*, 371. — *Galeandra Devoniana*, 131; *Gloxinera x Brilliant*, 371; *Gloxinia Ladas*, 481. — *Heli-conia illustris rubricanlis*, 403; *Hemerocallis Frances*, 516; *Hymenophyllum chilense*, 48; *Iris Helenæ*, 288; *I. variegata Prince of Orange*, 481. — *Lælia anceps Ashworthii*, 48; *L. superbiens*, 207; *L. Boothiana* (?), 283; *L. cinnabarina*, 326; *L. grandis Pittiana*, 516; *Lælia Cattleya H. n. Mrs. Astor*, 131; *L. C. Tydea*, 131; *L. C. Aylingi*, 403; *L. C. Frederic Boyle*, 404; *L. C. Canhamiana*, 516; *Loropetalum chinense*, 277; *Lycas e Skinneri* Mrs. H. Ballantine, 207; *L. cruenta gigantea*, 288; *Lygodium dichotomum polydactylon*, 481. — *Magnolia parviflora*, 404; *Maranta Massangeana metulica*, 404; *M. Massangeana Fiorentina*, 404; *M. Massangeana atrata*, 404; *Masdevallia gargantua*, 207; *M. Parlatoreana*, 481; *M. Asmodia*, 481; *M. glaphyrantha*, 481; *M. Cassiope*, 516; *Kemballiana*, 516; *Melon Pride of Ingestrile*, 370; *Melon Centre of England*, 404; *Miconia vesicaria*, 404; *Mittonia stellata*, 325. — *Oncoglossum excellens chrysomelum*, 207; *O. elegans*, Sander's var., 244; *O. sceptrum waltonense*, 244; *O. Andersonianum*, 288; *O. crispum Florie*, 326; *O. crispum Lowianum*, 326; *O. Pescatorei* var., 371; *O. triumphant Lionel Crawshaw*, 371; *O. crispum heatonense*, 371; *O. Andersonianum*, Young's var., 404; *O. Andersonianum superbum*, 404; *O. crispum Excelsior*, 404; *O. crispum Rex*, 404; *O. crispum Wolstenholme*, 404; *O. crispum zanthos*, 404; *O. crispum Massangeanum*, 404; *O. crispum capartianum*, 404; *O. crispum Trianae*, 404; *O. Vuytsteckianum*, 404; *O. Wilkeanum graudis*, 481; *O. sceptrum aureum*, 481; *O. sceptrum leopard anum*, 481; *O. crispum Miss Florence M. Bovill*, 481; *O. crispum mirabile*, 481; *O. crispum Baroness Schröder*, 481; *O. crispum grandis maculatum*, 481; *O. citrinum*, Rosefield var., 481; *Oncidium* (species?), 288; *O. Lancotianum*, 288; *O. sessile*, 325; *O. Marshallianum superbum*, 404; *Osmunda javanica*, 481. — *Pavonia intermedia kermesiana*, 131; *Pae ny Mrs. Manning*, 481; *P. La Perle*, 516; *Pelargonium Mrs. W. Wright*, 371; *P. Imogene*, 404; *P. Duchess of Fife*, 481; *Pescatorea Klubochozum excellens*, 516; *Phaius Blumel*, 207; *P. Owenia*, 326; *P. Owenianus*, 404; *P. Sanderianus*, 516; *Phalaenopsis Yonngi*, 131; *P. Vesta*, 207; *P. tetrasolis*, 326; *Phlox canadensis*, 326; *Phyllocactus Romeo*, 326; *P. Cooperi*, 404; *P. Jessica*, 404; *P. Orion*, 404; *Pieris formosa*, 371; *Primrose Elizabeth Brodie*, 244; *P. Queen of the Whites*, 244; *P. Evelyn's Beacon*, 325; *Primula White Perfection*, 131; *Polypodium Schneideri*, 404; *Pteris cretica semper-virens*, 44; *P. ludens*, 481;

PLANTS, &C. CERTIFICATED—Continued.

Pyrethrum Alfred Henderson, 481. — *Rhododendron multiflorum Mrs. Heal*, 181; *R. Ne Pins Ultra*, 207; *R. Niobe*, 207; *R. Rosy Bell*, 326; *R. rhombicum*, 326; *R. Princess*, 326; *R. William of Wurtemburgh*, 320; *R. Parity*, 371; *R. Duchess of York*, 404; *R. Duke of York*, 404; *Rose Lawrence Allen*, 283; *R. Medea*, 371; *R. Eugène Verdier*, 404. — *Sarracenia Willisi*, 481; *Scolopendrium vulgare scalariforme*, 404; *Senecio Ghiesbreghtii* (syn. *grandifolius*), 131; *Sonerilia H. Walter*, 404; *Spraea astilboidea floribunda*, 516; *Streptocarpus Wendlandi*, 207; *Sycamore*, Dr. Hogg's *Crimson* fruited, 481; *Syringa*, *Madame Lemolne*, 371; *S. pyramidale*, 371; *S. Sonvenir de Louis Seane*, 371; *S. Geant des Batailles*, 371; *Sweet Pea Emily Henderson*, 516. — *Thunbergia Harrisii*, 326; *Tomato Frogmore Selected*, 324; *Trocentrum tigrinum*, 207. — *Vanda Cathcarti grandiflora*, 207; *V. Hughii*, 288; *Vriesta Rex*, 207. — *Wistaria multi-juga*, 494.

Plants, some neglected, 347; for house decoration, 380; species of, 384, 430
Plumbago rosea, 348
Plumieria braziliense, 496
Pinus, 333; Mr. Crowley's mode of drying, 324
Plum trees, scale on, 353
Pocket-book notes, 265
Poinsettias, notes on, 35; leaves falling, 40
Polygonum complexum, 204
Polypodiums, the, 6; vulgare, 52
Polystichums, 317
Pomological Society (National) proposed, 220
Potatoes, pot culture of, 16; crop, the, 28; in Ireland, 59; starting, 81; Jeannie Deans and The Bruce, 109; new French, 204; crops and chemical manures (Alnwick trials), 225; experiments at Warminster, 258, 326, 340; at Alnwick, 259; the price of, 259, 471; and Brussels Sprouts, 310; trial in Surrey, 299; importations of, 383; from Cornwall, 403; disease in Ireland, 459; crop in Jersey, 496
Poultry fattening, 62
Presentation to Mr. and Mrs. Iggnlden, 427
Prices of garden produce in 1893, 67
Primulas, A. F. Barron and King of the Purples, 10; at Reading, 54; Cannell's, 94; missing, 146; japonica in pots, 203; farinosa, 222; leaves uses of, 270; Chinese, 278; obconica, 306; obconica, poison and remedy 327; lecture on, 318; Auricula, 419
Primroses and Polyanthes (double), 496
Primroses, hardy, 222; a plea for, 240; double, 281, 299, 321, 314
Progress in winter flowers, 94
Prunus myrobalana rosea plena, 267; Pissard, 287
Psylla Mali, 55
Ptychopaphis angusta, 91
Pyrethrum, propagating, 281
Pyrus elaeagnifolia, 298

QUEEN AND THE FRUIT growing industry, 108
Questionable advice, 336, 337
Quince rust, 204

RAILWAY, GARDENING, 30; embankment, a picturesque, 429
Rainfall, at Abbots Leigh, 2; at Swanmore, 51; influence of artificial on plants, 52; in West Scot and, 147
Ramondia pyrenaica, 19, 71
Ranunculus acris, poisonous, 451
Raspberries, jottings, 83; Superlative, 70; certifiers for, 84; digging amongst, 183; canes injured, 310
Reading, winter flowers at, 54
Red spider on Apple trees, 375
Resources, our horticultural, 421
Rhododendrons, multicolor Mrs. Heal, 149; Ne Pins

RHODODENDRONS—Continued

Ultra and Niobe, 207; *Himalayan*, 254; *Hélène Schiffer*, 363; at Kew, 385; *rhomboidum*, 407; some fine, at Birmingham, 473
Rhus cotinoides, 51
Richmond Show, 522
Riddings Court, 477
Robinia hispida, 51
Rockery, building a, 367
Root pruning, value of, 308
Roots, the nutrition of, 383, 408, 424, 444, 468, 489, 512
Roses, Hybrid teas, 12; N.R.S.'s Exhibition at Windsor, 34; Reigate Rose Association and Cottage Garden Society, 34; Hybrid Teas, 34; climbing Tea Roses, 34; clashing of dates of exhibitions in 1894, 45; Hybrid Tea question, 46; Queen's prize, Windsor Show, 74, 106; Reigate Rose Association, 74; Mrs. W. J. Grant renamed *Belle Siebrecht*, 74; canker on the wild Briar, 74; Hybrid Tea classification, 74; a royal cup for Roses (Windsor show), 92; Hybrid Teas, 92; Rose Mrs. W. J. Grant, 92; "The Rosarian's Year Book, 1894," 92; Eatham Rose Show, 105; Northern Provincial Rose Show, 105; Hybrid Teas, 105; N.R.S. synonymous Roses, 106; Workshop Rose and Horticultural Society, 106; Roses in pots, 106; Rose-growing under glass in America, 145; gold medal Roses and their origin, 145; synonymous Roses, 145, 162; gold medal Roses, 162; the clashing of Rose meetings, 162, 186, 225, 245; the best twenty-four H.P.'s, 162; Rose-growing under glass in America, 162; early growth in Roses, 162; Lacharm's Hybrid Noisettes, 162; pruning Tea Roses, 174; Sutton show, 183; earliness of growth in, 186; north and south, 186; the Queen's prize for, 186; pruning climbing, 186; north and south shows clashing, election of Teas, 200; early growth of, 201; show fixtures in 1894, Reigate Rose Association and clashing of shows, 225; Gustave Pigeau, 225; National Rose Society's provincial shows, 225; Hybrid Perpetuals in pots, 225; the Harkness silver cup, 246; prospects of the coming season, 245, 520; own root Roses, 251; show fixtures, 186, 264, 284, 304, 316, 360, 434, 467, 492, 519; N.R.S., the silver cup for small growers, 264; *Maréchal Niel* at Fair Oak, 264; new French Roses, 264; our future new Roses, 284; too-much-alike Roses, 284; parentage of Roses, 304; Roses at the Drill Hall, 305; mildew on Roses, 311; the prospects of the season, 316; Mr. A. Hill Gray on Tea Roses, 316; prospects of Rose exhibitors in 1894, 345; Roses at the R.H.S., 345; early Roses, 389; the National Rose Society's Shows, 360; Tea Roses, 375; mildew on Roses, 392; canker, 392; National Society, dates of Shows, 414; fungus on and remedy, 407; N.R.S. report and schedule, 434; the Harkness challenge cup, 434; Roses and the frost, 434; a wreck of Roses, 435; death of the Rev. F. H. Gail, 435; work among Roses in pots, 435; information wanted in New Zealand, 435; Gloire de Dijon falling, 440; orange fungus on, 441; effects of the recent frost on Roses, 454; the late Rev. F. H. Gail, 455; N.R.S. dates for Metropolitan Shows, 455; Rose Congress at Antwerp, 455; Roses in New Zealand, Rose notes, jottings, 455; N.R.S. members to visit Windsor, 469; dates of Rose shows, 469; the Rose prospects, 470; *elise Marie Hanriette*, 470; *Gloire de Dijon*, 470; in New Zealand, 470; Rev. F. H. Gail, 470; Mrs. W. J. Grant, 470; roses for hedges, 470; own root Roses, 470; number of blooms stayed at N.R.S. metropolitan Exhibitions in 1879, 493; Roses at York, 493, 519, 520; Roses at Colchester, 493; early Rose shows, 493; Tea Roses for standard, 508; the Polyantha stock, 508
Rose (National) Society's gold medal, 130; regulation of synonymous Roses, 145
Rose Shows—false or Wight, 520; Westminster, 520; Windsor, 521; Richmond, 522
Rubbish, a caution about, 189
Rubus delicio-us, 45; *R. sectabilis*, 496; *nutkanus*, 419
Rule of thumb gardening, 261

SACCOLABIUM CELESTE, 87
 Saivia splendens, at Ugbrook Park, 7; splendens Brnanti, 59
 Sarracenia Willisi, 498
 Saxifragas luteo-purpurea and S. Malyi, 127
 Scale insect on Pinm trees, 352
 Scolopendriums, 32
 Scottish manse garden, the intermediate season in, 67; in a, 357
 Scuticaria Steeli, 296
 Seakale, for forcing, growing, 137; insects on, 352; root cuttings, 320
 Seaside market, growing for the, 254
 Season, the, 9; an ideal, 335
 Seeds, sowing, 103, 143, 177; germination of, 109, 184; red-leaving, 239; soaking hard, 223; protecting from birds, 221
 Senecio grandifolius, 167
 Sensitive plants, 352
 Sequoia, an ancient, 281
 ericographis Ghiesbreghtiana, 50
 Shamrock, the, 224
 Shows—Birmingham, 210; Botanic, 209; Brighton (spring), 267; Newcastle-on-Tyne spring, 328; Narcissus at Birmingham, 328; Anricula and Primula at Westminster, 329; Antwerp, 388; Manchester Whitsuntide, 393; Southampton Spring Show, 94; flower, home, foreign, international, 399; Southern Pink Show, 478; London Pansy and Viola, 478
 Shrubs, manuring ornamental, 66; and trees flowering, 314
 Slaughterhouse liquid for Vines, 375
 Smilax asparagoides, 396
 Snowdrops, early, 72; new, 179
 Snowflakes, 121
 Soda, nitrate of, in Egypt, 429
 Soil, enriching during autumn and winter, 45

Soot in Strawberry pots, 212
 Sparrows and Cherry blossom, 280; variety of, 343
 Sphaeralcea abutiloides, 241
 Spider, a clever, 240
 Spinach, fattening, winter, 250; winter, infested with eel-worm, 291
 Spiraea astiboides, 20; Thunbergi, 260; S. arguta, 260; a hybrid, 472
 Spraying, 407
 Spraying fruits, 166
 Spring bedding, timely hints about, 236
 Spruce, Mr. Robert, death of, 10
 Stachys tubrifera, 69
 Stanhopeas, treatment of, 296
 Stapelia patula, 95
 Statice profusa, 459
 Stephanotis floribunda, 488
 Stephen's Green, Dublin, 475
 Stigmaphyllon ciliatum, 472
 St. John's Bread Tree, 495
 St. Mary Tallaght, Co. Dublin, 500
 Stocks for exhibition, 463
 Strawberries, early, 10; leaves, black dots on, 80; fertilisers for, 84; in India, 89; planting, 172; plants unsatisfactory, 231; forced, unsatisfactory, 311; growing for profit, 346; the flowering of, 342; Royal Sovereign, 319, 496; plants unfruitful, 395; Sensation, 472; The Captain, 496; notes on, 514; utility of Noble, 514
 Streptocarpus Wendlandi, 207, 223
 Streptosolen (Browallia) Jamesoni, 57, 77
 Sugar cane in Japan, 407
 Sullhamstead, cottage farm 459
 Surrey sand for fruit, 285
 Sutton & Sons, Messrs., excursion, 497
 Swanley, flowers at, 473
 Swanley Horticultural College, the, 493
 Sweet Peas, travelling, 23, 49; sowing, 49; white, 90, 114; bed

SWEET PEAS—Continued
 of, 192; in April, 299; Emily Henderson, 516
 Syringing, the value of, 253

TABERNÆMONTANA CORONARIA FLORE-PLENO, 246; T. cymosa flore-pleno, 246
 Tea cultivation on the Caucasus, 70
 Tea seed oil, 471
 Tecoma jasminoides, 153, 163
 Tecophilæa cyanococcus, 363
 Temperatures, temperance in, 84
 Temple show, the date of, 239; the, 400, 421
 Tennis courts, dimensions of, 484
 Thoughts developed, some, 153
 Thuia Lobbi, 270; aurea, 449
 Thunbergia Harrisii, 345
 Thysanacanthus rutilans, 348
 Toads and woodlice, 343
 Tomatoes, raising, 16; plants flagging, 397; discoloured, 440; leaves blackened, 440; "drooping" disease in, 524
 Tomtits, 28; in the garden, 54; in the garden and orchard, 70
 Tool houses as tell-tales, 275
 Trachelium caruleum, 61
 Trees, planting, 9, 43, 70, 93, 108; management of, 24; the internal temperature of, 108; planting, injudicious, 149; in Northumberland, 146; growth of, 147
 Trees and shrubs, manuring ornamental, 66; (Mr. A. D. Webster's book), 115; ornamental, 128; flowering, 314
 Tree leaves as fodder, 429
 Trichocentrum albiflorum, 45; tigrinum, 207
 Trinity College Botanic Gardens, 13
 Tritoleia uniflora and T. uniflora pallida, 319
 Tuberose culture, 353
 Tulipa Kaufmanni, 362
 Tulips, troubles, 3; early Dutch, 285; English, 334;

TULIPS—Continued
 exhibition at Westminster, 363; Dr. Clarke's lecture, 406; for forcing, 525
 Tulip Society, Royal National, 83, 123; show at York, 436; Wakefield Society's show, 437; show at Butley, 437
 Turkey Oak in South Africa, 211
 Turnips, 191

UMBERSLADE HALL, 561
 United Horticultural Benefit and Provident Society annual meeting, 208
 Urceolina anrea, 348

VALERIAN, THE (CENTRANTHUS RUBER), 458, 471; the Golden, 496
 Vanda Cathcarti grandiflora, 207
 Vegetables in America, 204; over-production, 313
 Veitch Memorial medal, presentation, 471
 Village on May day, our, 357
 Vilmorin's, M.M. donations, 252
 Vineries, ventilating, 336, 444; forcing, 350
 Vines, outdoor culture, 38; analysis of, 39; borders, deep, watering, 46, 85; forcing, 78, 190, 248; borders, mulching, 163; planting young, 159; for lean-to house, 174; canes, shortening, 193; managing, 212; about, 234; shoots blackened, 271; attention to, 308; growths dying, 311; aerial roots on, 352; leaves rusted, 393; laterals, discoloured, 441; attention to, 438; treatment of, 493; pruning, rational methods of, 487; browning disease in, 518
 Violas, 13; Conference, proposed, 219; at Birmingham 471
 Violets, in frames, 13; in Ireland, 90, 128; in Ireland, the size of a snilling apiece, 165
 culture of, 312

Viticulture in Uruguay, 89
 Vriesia Rex, 207

WAKEFIELD PAXTON SOCIETY 497
 Walks and edgings, garden, 96
 Wallflowers, acres of, 284; at Canbury Garden, 343
 Westminster Potato and Onion experiments, 285, 326, 240
 Wasps, early queen, 146; queen, 298
 Watering, wall trees, 286; in the spring, 266
 Weather, the recent cold, 51; in Guernsey, 51; the recent severe, 29; the dry, 232; in March, 262; notes, 183, 199, 299; in London, warm, 279; in May, notes on, 457
 Weeds and their uses, 102
 Weir, Mr. J. Jeanner, death of, 239
 Whin, and Furze, 201; or Furze? 122
 Williams, Mr. Walter Henry, death of, 52
 Williams' Memorial medals, 145
 Windsor Gardens in April, 335
 Winter, moths on Plums, 270; decoration, hardy foliage for, 127
 Wireworms, true and false, 378
 Wistaria sinensis, 289
 Wolverhampton floral fête for 1894, 9; prizes at, 69
 Woodlice, destroying, 311
 Wrightia zeylanica, 115

YEAR 2000, THE, 279
 Yew, is it poisonous? 31, 89, 100; poisoning by, 344
 York Floral Fête, 505
 Yorkshire Gala, grand, 30, 193

ZONAL PELARGONIUMS AT LEWISHAM, 27
 Zygopetalum rostratum, 7; Mackayi, culture of, 80

WOODCUTS.

	PAGE
Abelia rupestris	77
Abutilon vitifolium	463
Adiantum Clæsiæ	431
Amateur Orchid grower's dream, an	409
Beaumontia grandiflora	243
Begonia Gloire de Lorraine	185
Bongardia Rauwolfi	479
Calanthe, Baron Schröder	163
Chysis bractescens	263
Cornus brachypoda variegata	129
" florida	453
Costus igneus	11
Cœlogyne Mossiæ	365
Cypripedium Aodræ	103
" Annie Measures	337
" Ashworthæ	197
" callosum Sanderæ	423
" Fairieano-Lawrenceanum	45
" macrochilum giganteum	387
" Winifred Hollington	295
Dendrobium atro-violaceum	65
" Dellense	379
" Euryalus	315
" superbum Huttoni	275
Dublin, view in Stephen's Green	475
Epidendrum Ellisi	323
Eucharis Lowi	111
Fernery at Impney, the	53
Fritillaria aurea	357

	PAGE
Galeopsis dubia	349
Glass houses on wheels	413
Gomphia decora	15
Grapes—Fungus (Polyactis cinerea) on berries	171
" Polyactis (Botrytis) cinerea as a parasite	171
" Section of shanked Alicante berry	171
" Shanking	171
Hæmanthus Lindenii	73
Harkness challenge cup, the	435
Hedera helix tessellata	209
Hyacinth, a proliferous	255
Iris Helenæ	302
" Kämpferi	205
" Rosenbachiana	189
" Sindjarensis	227
Lælia anceps Ashworthiana	125
Lælio-Cattleya Hon. Mrs. Astor	141
" " Nysa	31
" " Tydea	181
Linum arboreum	327
Loropetalum chinense	235
Lycaste costata	467
Marianthus Drummondianus	307
Masdevallia gargantua	233
Meyenia erecta	35
Mutisia Clematis	134
Narcissus Weardale Perfection	303
Odontoglossum crispum Baroness Schröder	491
" " Nobilis	430
" " Sanderæ	401

	PAGE
Olearia stellularia	369
Oncidium phalænopsis	515
Orchid grower's dream, an amateur	49
Phaius Marthæ	219
" Owenianus	445
Phlox canadensis	503
Phrynium variegatum (Maranta Arundinacea variegata)	27
Portraits—Mr. Charles Van Geert	453
" Rev. Hugh A. Berners	522
Prunus myrobalana rosea plena	267
" Pissardi	237
Ptychoraphis angusta	91
Rhododendron multicolor Mrs. Heal	149
Saccolabium cœleste	87
Sarracenia Willisi	499
Senecio (Ghiesbreghtii) grandifolius	167
Stapelia patula	95
Stephen's Green, Dublin, view in	475
Streptocarpus Wendlandi	223
Streptosolen (Browallia) Jamesoni	57
Tabernæmontana coronaria flore-pleno	247
Tecoma jasminoides	153
Thunbergia Harrisii	345
Travelling glass structure, a	413
Van Geert, Mr. Charles, portrait of	452
Vine growth affected with browning	518
" spores of Fungus (Plasmodiophora vitis)	519
Wrightia zeylanica	115
Zygopetalum rostratum	7



ONCE more I have been asked to send forth to the readers of the Journal a friendly salutation on the opening of the New Year. I could not but respond to it, although there are reasons why another voice and hand might be preferable, for when one comes to be verging on the octogenarian it is questionable whether younger and more active minds should not engage in the task. The old hunter, when he hears the pack in full cry, may raise his head, and snort, and whisk his tail as if he were going to engage in the chase; but, alas! he finds after a few frantic attempts that his limbs will not carry him, and he cannot do as he once would. So we may flatter ourselves that our experience may tell for something; but, after all, the freshness and the vigour of youth are gone from us.

Then again, when year after year one comes to fulfil the same duty, there is the dread of repeating oneself ever present. When I was at Deal I had once a year to perform a somewhat curious function. An old pilot had left a small sum of money, out of which a fee had to be given to the clergyman, clerk, and sexton, on the condition that on the anniversary of his first wife's death a sermon should be preached by the parson on one particular text. Now as I had to do this for twenty years, it was not easy to break fresh ground, and consequently there was always the fear of repetition. The moral of this incident is evident, and if any of the readers of the Journal do take the trouble to look back at the past volumes to see what the old parson has said, they may perhaps be ready to say, "Why this is the same old story." And yet the variations of horticulture are so many, its progress and development so great, that there must ever be some change at any rate to note, and therefore to give some relish to the dish.

The year 1893 will ever remain a memorable one in the annals of horticulture and agriculture in this kingdom. The full effects of the terrible drought which for so many months prevailed over the southern part of our kingdom had not perhaps been fully realised, yet on all sides we hear how great have been the losses the cultivator of herbaceous plants has had to tell of, losses and injuries such as he had never before experienced; and in places where the supply of water has been deficient every species of culture suffered. Many are the moans that have come from the cultivators of Lilies as to its evil effects on that charming tribe; flowers were fully expanded a month before their time, and consequently were over and past much sooner than they ought to have been; and as week after week the hot weather drove plants into flower, it became evident that when autumn really came the so-called autumn flowers would be past. This forwardness upset all the plans and calculations of growers of special flowers—Roses, as we all know in the south of England, were a miserable failure; Carnations and Picotees were pretty well bloomed out by the time that the exhibition day arrived; Gladioli, which should have been in full bloom about the beginning of September, were over in the beginning of August; and the same had to be told of most flowers, although by some strange perversity Chrysanthemums were in many districts somewhat later than usual; but altogether we must put down the past year as the most disappointing one that the gardener has experienced for half a century.

The most extraordinary circumstance, however, connected with the season was the superabundance of fruit of all descrip-

tions. Not only were our gardens filled with fruit of all kinds, bush and tree, but every hedgerow teemed with its ripened fruit, while the abundance of acorns was prodigious. All this had a striking lesson for fruit growers. Apples, unless of the first class, were unsaleable, though first-class fruit was able to command a fair market. I have heard, for instance, of one grower who sold 500 bushels of Lane's Prince Albert for 5s. per bushel, while commoner Apples had to be given to pigs and other animals to eat, clearly pointing again to what has been so frequently enforced in the Journal, that if fruit-growing is to be profitable only superior and saleable varieties should be grown. It is somewhat strange how the colour of a nasty flat Baldwin will entice buyers, who will turn their faces away from an English Apple not so handsome, but with ten times the flavour in it. It is the same, say, with Potatoes. One is continually recommended to try some new variety from the other side of the Atlantic. They are, as it is said of them, a ball of flour, but without a particle of the true Potato flavour such as we get in a York or Scotch Regent.

The year has not been one with any remarkable sensation in horticulture, and as London is the centre of all things to the Englishman so the state and condition of horticulture as exhibited in the metropolis is a pretty sure index how things generally are throughout the country. That the love of flowers and gardening generally is still ever increasing is testified by the wonderful growths of immense establishments in the neighbourhood of London and throughout the kingdom, where flowers, fruit, and vegetables are grown to meet the ever increasing demand. The result has been in such a season as the past of excluding many of those foreign competitors who have been accustomed to spoil the English market, and home-grown Grapes and Tomatoes have almost excluded the foreign ones; and if London is the centre of horticultural enterprise, then will all lovers of gardens ever look to the Royal Horticultural Society as the source of much that is of the deepest interest to all gardeners. During the past year it has gone on the even tenor of its way, and indeed has attempted something new. The grand scheme for a horticultural hall seems to have collapsed, and for the time at least the matter is shelved. Rumours have been circulated of a proposed return to South Kensington under the auspices of the Imperial Institute. Those who remember the miseries of those years when the Society was located at South Kensington might well shrink at the possibility of such a retrograde movement. We are assured, however, that it is not to be; for although its present position leaves much to be desired, yet it would be a sorry thing were it to barter its independence for any problematical advantage. The Temple Show was as usual a grand success, it brought together exhibitors from all parts of the kingdom, and some from Belgium and Holland. No department of horticulture was left out, and from the aristocratic Orchids down to the tiniest alpines everything was a grand display of floral beauty to suit all tastes. The Show also was financially a success. The same, however, could not be said of the new departure at the Agricultural Hall, Islington, in the closing days of August. Anyone who knows the neighbourhood could hardly have anticipated anything else but failure. There was a grand collection of flowers, of fruit, and vegetables, but, alas! few to look at them. The Society did what it could to open out new sources of interest, not without success. After all, the fortnightly meetings form the chief source of interest in the Society's proceedings. Whatever novelties the world can produce are brought forward, and it is sometimes wonderful to see how the dingy building is brightened by the multitude of brilliant flowers. But two things suggest themselves—one is, whether there is not too much of a market appearance about it, and whether the large collections of plants, which are the ordinary stock-in-trade of so many growers in the neighbourhood of London, might not be dispensed with when rarities and novelties would stand a better chance of being noticed; the other is, whether Kew

might not do a little more to add interest to the meetings. There must be always many things in such an establishment to interest all lovers of plants, and although the officials occupy a high and serene position, they might sometimes condescend to consider the inferior mortals who lie outside their gate.

The International Exhibitions at Earl's Court, while not equal in point of interest to those of the preceding year, have yet on the whole been creditable, and advanced the interests of horticulture. They have had the effect, as before, of interfering with the Crystal Palace Exhibition, and the loss of the Great Autumn Fruit Show held there in September has been widely felt and greatly mourned, and, as there does not seem to be much probability of the continuance of the Earl's Court Exhibition, 1894 will no doubt see its revival. Of the Royal Botanic Society we hear but little; its finances, however, do not seem to be in a too flourishing condition, but its exhibitions and fêtes seem to attract many persons.

I do not think either that the past year has been noted by any great horticultural or botanical novelty. The love of Orchids, or rather the taste for Orchids, seems to know no diminution. Not only is the world ransacked, the primeval forests penetrated in search for them, but the successful efforts of the hybridiser are adding fresh beauties to our collections and fresh perplexities to the botanist, who, having been wont to scoff at the florists with their unscientific names, now find their sacred domain invaded in like manner. It will give some idea of the direction in which the taste runs, when we find that eighteen *Cattleyas* and thirty-four *Cypripediums* have been either certificated or had awards of merit given to them, while amongst florists' flowers thirty-two *Carnations* and sixty-two *Chrysanthemums* sharing the same honours are a pretty strong indication as to the popularity of these two classes; but where are places to be found for all these novelties, and will many of the older varieties survive? The past year has not been signalised by any new departure in horticultural literature, for we can hardly include in that description the commencement of the publication of the "*Index Kewensis*," a magnum opus indeed, of which two parts have already appeared—a work of immense labour and research, and as a book of reference will be found invaluable.

The death roll, though not so long as usual, contains the names of many for whom florists especially will mourn—men who have done good service to the classes of flowers over which they have been engaged. What a hearty florist, for instance, have we lost in Sam Barlow, to whom nothing that claimed to be a florist flower came strange, and who, first at Stakehill near Manchester, and afterwards in his beautiful garden near the Orme's Head, cultivated so many and such choice plants. The Rev. Frederick Tymons, but little known on this side of the Channel, but a kind and genial florist, occupied in the sister Island the most prominent place as the cultivator and exhibitor of many florist flowers. Of the good service done by Mr. Thomas Laxton as a hybridiser in fruits, flowers, and vegetables it is hardly necessary to speak; while the closing weeks of the year have removed from amongst us Mr. E. S. Dodwell, who during a long life has done more for the improvement of the *Carnation* and *Picotee* as a florist flower than perhaps any other person. Two well-known names amongst raisers of *Roses* abroad have passed away during the past year, Mons. Guillot of Lyons and Mons. Charles Verdier at Paris. The former, who has done more to enrich our *Rose* gardens than almost any other raiser, the value of his introductions being testified by the fact that two of his *Roses* carried off the highest awards the very year he was taken from us. Mons. Charles Verdier did not occupy perhaps so prominent a position; in past years he gave us many good *Roses*, which have been, however, superseded by other varieties. He was an estimable man, quiet, and business-like; he leaves no family, and I believe his business passes into the hands of his brother Eugène. Nor can I leave the record of our *Rose* losses without alluding to the loss we have sustained by the death

of our Vice-President, the Rev. J. M. Fuller; he will long be missed at the meetings of the Committee, over which as one of the Vice-Presidents of the Society he has so long and so ably presided.

Such is a brief record of the past year. Of course it can only be a sketch, and that a very imperfect one, and now we have to look forward, uncertain in this as in everything else, to what a year may produce. We have fallen upon critical times; the continued depression in agriculture, stagnation in commercial enterprise, the disputes between capital and labour, have all had a depressing tendency, and their effects are being felt in many departments of horticulture. Still, we must try to look hopefully on; we must recollect how difficulties have been surmounted in the past, and that by the same energy they may be in the future. All we who are interested in the Journal must hail with satisfaction the many proofs that it gives of its vigour, its power of adaptation to the increasing exigencies of the times. We are all thankful to see the vigour of our venerated chief, and hope that he may long be spared to guide its ways. Some of us have grown old in its service, and must soon resign our pens to younger and abler hands, and so gladly welcome the appearance of fresh contributors, who may supply our places when we are gone. To the Royal Horticultural Society also we all look hopefully; so long as its affairs are under the direction of its present Secretary, whose courteous and business-like habits have done so much to lift it out of the quagmire in which it was sunk, and so long as there is a Council which commands the confidence of horticulturists, we may hope success will attend its efforts.

Now, my brothers and sisters of the gentle craft, look hopefully on. We know not what new developments may take place, or in what direction. Some years ago a few horticulturists were met together, when the question arose, "What flower shall be taken in hand to be improved?" It was said the *Fuchsias*, *Pelargoniums*, and *Cinerarias* had reached a standard which could not be surpassed. One of the company said, "There is the *Tuberous Begonia*!" It was taken in hand, and with what marvellous results we all know. What is to be the flower of the future, who can tell? But I would say to you, Press on; there are triumphs to be won, and pleasures to be experienced. We need not fall back upon Lord Bacon's apothegm, for we all know from experience the pleasures which a garden gives to us. Ever since my earliest days flowers have been my companions and friends; in rain and sunshine, storm and calm, they have ever spoken to me, and now that I am old I can look back with thankfulness to the solace they have been to me during those dark and cloudy days which fall to the lot of everyone of us. They tell me, too, that in looking forward to what lies beyond this life the fairest idea that can be set before us is the new Eden into which sin and sorrow are never to enter. I ask you, then, not simply to believe what experience has taught me, but try it more and more for yourselves, and I have no doubt the results will be to you what they have been to me. And now the year 1894 opens upon us may it be to you and all in the truest sense, a Happy New Year.—D., Deal.

A RETROSPECT OF THE PAST YEAR IN IRELAND.

IN a slight retrospect of the past year in Ireland I must claim the indulgence of those who read the little I am able to say on the subject, for my personal experience is limited to the county of Dublin; but centrally situated as it is on the eastern seaboard it should give a fair average of the effects of the past year on our green little island. Neither can I offer a mass of statistics. Why then, may be asked, do I obtrude in the pages of the *Journal of Horticulture*? With the proverb in my mind that *qui s'excuse s'accuse* I offer instead of excuse a motive, viz., that of making the Journal a bridge over the seventy miles of sea on which we can communicate with you, gardeners of England, and that the ocean may not be a bar to a "union of hearts and hands."

Taking it for granted that you are aware this land, known of old

as the Island of Saints, is not all saints now any more than the flora and fauna is summed up in Potatoes and pigs, of which in some minds a vague idea may (I think it does) prevail that it largely consists of; but Potato patches do not monopolise the country, and as for the "gentleman who pays the rent," judging by his present high market value, he may yet become as extinct as the dodo.

Comparing the year just past with Jubilee Year, already passed into history, yet sufficiently near to bring them side by side for comparison, at no period of it did vegetation assume the parched appearance of 1887, when lawns and pastures were so killed that not till the following spring did they resume their normal condition. Here, at the foot of the Dublin mountains, with the granite rock peeping through the lawns, sufficient surface sprinklings of rain have fallen to keep them fresh and green, and our meadows yielded a crop but slightly under the average; yet springs all but failed, placing us in the anomalous position of wanting water but not rain. The supply to the city taken from the mountains of Wicklow has been a source of serious anxiety to the corporation, who have had to supplement it by going back to their original supply from the canals.

Whilst mentioning our metropolis, familiarly known as "dear dirty Dublin," I would ask any visitor who finds himself in it on a fine day to stand on Carlisle Bridge and look seawards, the stately Custom House on the left, an azure sky practically untainted by smoke, flocks of gulls, "birds of the broad and sweeping wing," circling in mid air, then make a mental comparison with any manufacturing town of similar size he may be acquainted with, say Bristol, which I know, or Edinburgh, which I regret to say I have not seen, any seaport will do, to ask himself, as I have done, Is not this a libel on the chief Irish city? At low water, perhaps, some leviathan of the deep churns up the bed of the river with its screw, causing comparisons to be "odorous," but the ozone-laden breezes sweep up from Dublin Bay neutralising these "ancient and fishlike smells," that in place of being injurious they must be actually nourishing, judging by the longevity of dwellers on the quays.

In a review of the seasons in their order, spring commenced with the advent of March, February's snows which had mantled us now disappeared, the thermometer seldom falling below freezing point, and maximum temperatures read high. This was the driest month of the year, rain falling on five days only with a total of but 0.360. Never did seeds go in better, but germination was slow; previous to March our rainfall was 5.330. April gave on six days a rainfall of 1.140. The Royal Horticultural Society's spring Show on the 20th just caught the last of the Narcissi, which had been exceptionally fine. In comparison with a normal season we were now fully a month in advance, which position was maintained throughout. Spring flowers were on the wane; in a stand of twenty-four varieties in which hardy flowering shrubs are admitted I was able to put the showy rose-coloured Tree Pæony, *Rhododendron Barclayanum*, and the handsome *Cytisus scoparius Andreanus*. All should have this beautiful new Broom, which in a stand of hardy flowers helps to sweep clean.

May was a delightful month, without frosts; rainfall 2.320. Three weeks' absence from home and duty in making a temporary garden for a fête at the Royal Dublin Society's premises, Ball's Bridge, it is needless to say, threw me out of the routine of work and observation, but it was satisfaction to find amid the varied entertainments and stalls represented by all Ireland, the work abroad was appreciated, and the garden was a prominent feature of this combined fête and bazaar, styled "Kosmos," resulting during the six days it was open in a nett gain of £11,000 to the City of Dublin Hospital, for which it was organised. But while I was busy abroad others were busy at home in the shape of Onion and Carrot grubs, and these gentry had each cleared off the food they favoured.

June came in with anxiety to complete the bedding. *Calceolarias* had been planted in April; though many complaints of their dying out was common during the summer I never had them better. *Alternantheras* went away without a check. The only drawback to carpet bedding was the persistent manner in which blackbirds and thrushes tore up the *Sedums*, and marred the effect of what would have been otherwise perfect. *Arenaria balearica* they avoided, and this I am preparing to use as a substitute for *Sedums*. At this time one could never tire in admiring the rich and varied beauty in the foliage of the trees, dense canopies of many tints, nipped by no untimely frosts nor torn by ruthless winds; nor were they of less interest in the heavy crops of inflorescence they now carried, whilst the music of countless myriads of unseen things in their leafy home overhead fell soothingly on the ear. We started cutting grass in meadows on June 19th with all appearance of a long spell of unbroken weather, but were sadly out in our reckoning, for from the 21st to the 29th we had more or less rain every day, but with that doubtful consolation of others being in the same boat, for haymaking at this time was general in County Dublin; 1.960 was the measure of rain this month.

Summer was marked by no boundary line of dates. Some time

back in the spring it had imperceptibly stolen upon us. Our Rose Exhibition on July 6th showed at a glance how matters stood. Amateurs in County Dublin were fairly out of it, but the Messrs. Dickson saved the reputation of the Show, and added to their own by staging exceptionally fine stands, bearing witness that with them in the north matters were not so far advanced. Expectations of a good autumn display were not realised—aftergrowth was wretched. Strawberries were practically over and only represented by Waterloo, shown in good form, but to my thinking the colour is objectionable. By July many *Chrysanthemums* had given their second crown bud, which removed, resulted in a third crown rightly timed for exhibition. Princess family were the exception, forming second crowns at the usual time; Mrs. A. Hardy was as usual "uncertain, coy, and hard to please"—with thirty plants she refused me a show flower for the battlefield. Give her up, you say. Oh, no, I am in for fifty this year. The lady may, as she has before, prove a ministering angel in the hour of trial. July registered 2.290 in the rain gauge, with 78° maximum shade temperature on the 24th, the hottest day we had here except August 17th, which gave the record for the summer with 79°.

Bush fruits were abundant, Gooseberries phenomenally so. Every flower must have set and swelled. Pendent varieties hung to the ground in competition with blackbirds to see which could get the most. They beat us, but both parties were satisfied, for we had other fish to fry—so had they in attacking hard Pears and making inroads for the wasps, which were here as elsewhere unusually abundant. August gave the record for rainfall with 3.400. On the 9th a tempest, tropical in its grandeur, visited us, coming up at 9.30 P.M. from the south, also eastwards from the sea. Vivid and continuous sheet lightning lasted till 11 o'clock. Cattle on the mountain sides two miles distant stood out distinct in the electric glare against the black pall overhead. In this locality storms of such intensity are rare. The autumn Show on the 25th was an unusually good one.

September, October, and November gave collectively 4.230 inches of rain, completing our total supply for the eleven months of 21.030 inches, being about two-thirds of the usual average of other years. Autumn afforded every facility for lifting Potatoes, and disease was rarely noticeable. The Scotch Champion is for Ireland the champion still, being grown to the extent of 79 per cent. Present price for picked qualities in Dublin Market is £3 per ton. Kemps and Flounders are the principal midseason varieties.

The panic at midsummer in the hay and straw markets was of but short duration, though we were then threatened that hay would now be £10 per ton. Present prices for best qualities are less than half that, while straw, wheaten and oat, fluctuates from 30s. to 50s. per ton. The shiftless way in which both are put on the market detracts much from its appearance, and cannot fail to lessen its value. Trussing and binding hay seems unknown here, being loaded loose on the carts, and straw, if bundled, is tumbled together in the loosest manner. Agricultural statistics will probably show an all-round under average, but no such failures as reported in the south of England. We may not have had so much sunshine as in England, but sufficient, and I trust a balance over, to carry forward in our hearts to meet those rainy days which may come to us in the yet unrevealed present year.

A retrospect of a year just gone, but gone for ever, brings solemn thoughts; other things crop up besides those mentioned. We miss

"The touch of some vanished hand,
The sound of a voice that's still."

But, sustained by that "hope which springs eternal in the human breast," we look forward to a Happy New Year. Such may it be to you, brothers of the craft in England.—E. K., *Dublin*.

TULIP TROUBLES.

ARE Tulips really so troublesome that they may justly be put aside? Surely not. Many growers of them will dissent strongly from the implication that the beauty and interest of these splendid flowers are overbalanced by the necessity for an elaborate cultural régime. There are few florists' flowers which will flourish under such simple treatment as Tulips, and still fewer which give their grower so rich a reward for his care and attention.

I do not think it could be said that the decline in favour which Tulips experienced some years ago is attributable to their entailing a great amount of trouble in cultivation. Even when they are managed on the old plan, arranging bizarres, bybloemens, and roses on the orthodox lines of the old growers, it merely means working on a well-ordered system, and that, as every business man knows, saves trouble instead of causing it. Anyone who has had opportunities of practising it, or seeing it practised, will recognise that an ordinary routine of Tulip growing is a constant guide to the worker. He knows where to look for every sort, and

if unable to do the honours of his collection can hand his plan over to the visitor, and leave him with the certainty of his being in a position to make an instructive as well as enjoyable survey.

So far as culture is concerned, there is no more trouble in growing a collection of Tulips than there is in managing a collection of Daffodils. Save for the season of planting, the course is very much the same. Neither Daffodils nor Tulips do thoroughly well on the leave alone system, but if annually lifted, cleansed, the smaller sorted out for nursery beds, and the full-sized bulbs then replanted, the best results are secured. There is much enjoyment to be derived from growing a collection of either of these beautiful bulbs, and the fact of operations being carried on in the open air means that the work is healthful too.

It might perhaps be said that there is a serious trouble in refining a collection of Tulips, so many sorts having to be eliminated that are not up to concert pitch. But is not this task one of the great charms of Tulip growing? There is a perennial hopefulness in the work. It is scholastic, and gives pleasure to those whose thought-tendency is advancement. The grower weeding out inferior sorts is like the lapidary who is making a beautiful gem from a shapeless "rough diamond." His art does more than occupy his hours, it gives him keen mental enjoyment and intellectual satisfaction.

Tulip lovers of all grades owe a deep debt of gratitude to the devoted band who are striving to lift the Tulip back to its old place, and who are working with true wisdom in the groove of improvement. The secret of the flower's decline may not lie wholly in the gross corruption of the strains by the wholesale dissemination of bad sorts, but unquestionably that had much to do with it. A good Tulip—a Mabel let us say, or a Pilot, or a Storer's No. 4—is a truly beautiful object; but many of the mongrels have no more claim to comparison with them than a street cur has to a St. Bernard. Without pandering to the absurdity that everything English must be good, and everything foreign bad, it is impossible to deny that the blending of foreign "blood" has seriously impaired the value of the true strains. Many of the continental sorts lack cleanliness, and when they crop up amongst their purer sisters their appearance at once betrays them.

Those of the trade growers who are taking up florists' Tulips, will find the advantage of following in the footsteps of the private cultivators. Before they trouble much about selling, they must refine. There are immense numbers of Tulips either masquerading under false names, or hiding a mysterious light under the bushel of an unknown one, that are utterly unworthy of culture beside the true jewels. These will have to be rigorously condemned if growers are to become more numerous. In short our dealers must be artists as well as tradesmen, and, to their credit be it said, they are awake to the necessities of the case.

Then there may be another, and this time a real, source of trouble, and that is disease in the collection. While there may be two opinions as to whether improving the strain is tedious or pleasurable, there can only be one when foul brood finds its way into the Tulip hive. Disease is the serpent in the Eden of the Dutch growers, and sometimes baffles all their efforts to eradicate it. I have seen thousands of plants going off under the eyes of life-long cultivators. Growers of choice collections in this country will not err by giving a season or two of quarantine to all importations, keeping them in a separate bed, and for the rest guard against evil by the provision of a wholesome and well-drained soil. To pick the lowest spot in a garden for a Tulip bed is quite likely to "entail trouble," in the form of disease. Without doubt one of the great requirements of Tulips is a deep, friable, and thoroughly drained root medium; and with that provided a long step has been taken on the road to success.

The beauty of these flowers is great, their interest absorbing. As the eye is arrested by their exquisite markings and pure tones, so the imagination is struck by the twofold phase of their bright life span. In the self stage they are as children developing under the eye of a loving parent into the ripe dignity of a noble maturity, or as the tints of dawn deepening into the flaming glories of day.—W. P. W.

THE FRUIT SUPPLY—MARKET TREES.

MUCH good advice has been given in the *Journal of Horticulture* relative to the avoidance of cheap bargains in fruit trees, and readers have been told to let market bundles alone. Everyone whose advice is asked on buying and planting fruit trees should express those views. I hold that the greater amount of inferior fruit which is produced in orchards all over the country and sent to the markets is grown on trees which have been purchased in open markets. Many such trees have been planted that should be grubbed up and better varieties from a good source obtained. These

will produce fruit that, under good management, will bring profit in due time. I am aware that trees sold in the markets at the present day are better and truer to name than formerly, but they are risky, and time and money may be wasted in buying and planting such trees. Too often we see fruit trees exposed for sale with a rank growth and few roots. These when planted have a lingering existence, and inferior fruit is the inevitable result.

I am glad to see that many orchards, particularly in the West of England, are being planted with well selected trees of approved sorts of fruit. I have previously mentioned in the *Journal of Horticulture* an instance of many cheap market trees having been planted, which I predicted would be of little value. This has since proved true. Several of the trees have died, and the ground is now planted with new trees from a good source. No doubt the cost of standard fruit trees is taken into consideration by the tenant farmers. In some instances the price is as much again from a nurseryman as that paid for trees in the market, and with the present depression in agriculture and other industries, the farmer or small holder, unless he is told the difference, and what the results are likely to be from the rank growth and dried roots of the market trees, buys these trees as his father did before him, and then if he eventually has fruit, wonders why it is not so large and good as his neighbour's, who procured better trees of useful varieties from a nursery.

I believe that well-rooted, healthy, standard fruit trees can be purchased from £7 10s. per 100 trees true to name, and if their selection is left to a nurseryman of repute, and he has a description of the soil, varieties will be sent that will succeed, and give pleasure and profit to the buyer if properly attended to when received, carefully planting and staked, also protected from rabbits, and mulched with manure. When tenant farmers or small holders cannot procure trees I think the owner of the land should purchase them; surely no right thinking tenant would object to pay interest on such outlay. I know on some estates (Madresfield Court, for instance) where trees are supplied to the tenant farmers and cottagers by the owner. We see planted healthy young fruit trees, which are giving pleasure to the possessors and increasing in value every year. The example practised on that estate is worthy of being followed. Private enterprise can do a great deal to further the object we all have in view without in any way doing injury to the trade: it would rather a benefit to it, as the example alone mentioned has encouraged other people to purchase and plant who otherwise would not have done so.—JOHN CHINNERY.

AN EAST LOTHIAN GARDEN IN 1893.

(Concluded from page 570, last vol.)

AMONG flowers I think the outstanding one has been the Carnation. I had about a thousand plants together out of doors, and when these were in full flower they presented a beautiful sight, while individually the several varieties, many of which were tried for the first time, gave much pleasurable interest. In addition to the above we had 500 yellow-flowered kinds and a few hundreds on trial, which were later than the majority of the plants, and, therefore, prolonged the display for a long period. Last year and the year preceding that Carnations flowered so late that the time of their beauty was greatly curtailed, therefore they were all the more welcome this season. The new varieties in Carnations are being distinctly overdone. What with Continental and English, not to say American varieties, which appear to have characteristics of their own, it is impossible to try many of the newer kinds. Some of Benary's sorts are very good, and they have generally a strong fragrance. These are kinds which ladies like:—Emilia Gallotti, Mignon, Jessica, Brockhaus, Holbein, Meta, Fireball, Madonna, Schleiben, Cordula, and Superba. Of English sorts Ketton Rose was in particular very beautiful; the want of scent is, however, a drawback. Out of a large number of white varieties I liked Niphotos best of all. It is good in all respects, and is distinctly Clove scented. Another grand border Carnation from the same raiser is Aline Newman; a red variety with a sweet fragrance. The older sorts—Germania, Raby Castle (a variety of several aliases), and Mrs. R. Hole—are still unsurpassed. I notice a marked improvement in the strain of Marguerite Carnations. "Mal-maisons" were not in general so good as usual. The intense heat seemed to take the colour out of the flowers, and the growths were so much ripened that plants intended to flower in the spring have produced an abundance of bloom during the autumn and winter. At present the flowers are darker in colour than I have ever seen them. I am, of course, referring to the dark pink form.

Next to Carnations the spring display of Fancy Polyanthus, Tulips, and Narcissus was perhaps the most interesting. A bed of the Giant French Ranunculus yielded much pleasure. Irises of all

kinds were finer than usual. Unfortunately, early *Gladiolus* had been killed by frost, and the display of these was wanting. The same frost destroyed nearly all our plants of *Hyacinthus candicans*, and also a large collection of *Montbretias*, as well as crippling *Schizostylis coccinea* and *Tritomas*. The other *Gladiolus* were somewhat crippled by want of water, and the spikes were not so good as usual; but as a set off the corms have never turned out cleaner or better ripened. The feature of the late autumn months was doubtless the *Michaelmas Daisies*. *Aster amellus* was beautiful for ten weeks, and *A. novæ-angliæ* and *A. novæ-belgæ* produced abundance of flowers. The season favoured Zonal *Pelargoniums*, and among these nothing was prettier than the clear pink *Christine*. Henry Jacoby next to this was the best. In our dry soil, notwithstanding much watering, *Begonias* did not prove successful. We had eleven beds of *Begonias*, and if it had not been that a ground-work of *Königa* was growing among them, these beds would have been an eyesore. *Dahlias* were very floriferous; too much so, perhaps, as by autumn the flowers were small. We had some very beautiful forms of *Cactus*, such as *St. Catherine*, *Kynerith*, *Beauty of Arundel*, *Panther*, *Juarezi*, *Yellow Juarezi*, and many more. *Roses* were particularly poor. They had been badly frostbitten, and then the drought made the period of flowering very short. However, many of the plants have made excellent growth, and the prospects for another year are encouraging. *Rosa rugosa* fruited freely, and the hips were very beautiful. Autumn *Roses* have been fairly plentiful. There has always been a few blooms of *Gloire de Dijon*; last week we had some charming buds of *Henry Bennet*. Christmas *Roses* again are much earlier than usual; *Helleborus maximus* is almost past, *H. angustifolius* is just opening its pearly buds, and some of the species, such as *atro-rubens*, are opening flowers not a few.

Regarding *Chrysanthemums*, the earlier varieties were very early, but the others have kept back exceedingly well—so much so, indeed, that we have a splendid Christmas and New Year supply. Our best at present comprise, in white varieties, *Lady Margaret*, *Fair Maid of Guernsey*, *Madame Louise Leroy* (a fine sort), *Florence Percy*, *Princess Teck*, *Mons. Astorg*, *Condor*, and some plants of *Sœur Melanie* kept cool. In yellow flowers we have *Peter the Great*, *Miss A. Lowe*, *Guernsey Nugget*, and *Yellow Ethel* in light shades; *Alice Bird*, *Old Gold*, and *President Hyde* in dark shades. Red varieties are represented by *Val d'Andorre*, *Julie Lagravère*, and *E. Molyneux*; and rosy shades by *Maiden's Blush*, *Amy Furze*, and *Etoile de Lyon*. Of earlier kinds I have never seen *Elaine* finer than this year. These, of course, are all grown as bush plants.

Of annuals, *Asters* were excellent. *Comet* improves on acquaintance, and among white flowers this must be termed one of the best for cutting. I had a long-continued display of *Sweet Williams*, raised from seeds sown the previous year. *Mignonette* again from June until November was most attractive. I had a number of varieties, and allowed each plant room for development with a most pleasing result. Though the season was one of the worst for *Sweet Peas* flowering, by keeping the pods from developing the bloom was generally good and continued as long as usual. The sorts I shall grow in largest numbers in 1894 will be *Her Majesty*, *Venus*, *Blushing Beauty*, *Cardinal*, *Firefly*, *Countess of Radnor*, *Emily Eckford*, *Captain of the Blues*, *Mrs. Sankey*, *Lady Penzance*, and *Orange Prince*. The only essentials to be observed with these are to give the plants plenty of room, to grow only the best kinds, and gather all the flowers as they open.—B.

AFRICAN FLOWERS.

WHEN at times I read about the yellow *Arum* it occurs to me I may copy portions of letters received from my nephew in Swaziland, Africa, sent to me in 1891. Having to search for some other matter I came across these African letters, and am of an opinion that they will be of interest to many readers of the *Journal of Horticulture*. My nephew writes as follows:—

"The seeds I sent home were those of a very pretty fluffy Grass, some white, some a coral pink, and also seeds of the Sensitive Plant which I think most probably the kind you had; it grows to a fine bush here and has a very pretty blossom. Grasses are now coming on, and I hope to be able to send you some seeds shortly, though I do not know if they will come to perfection in your country.

"The Ferns are very pretty and varied in the streams and gullies; some I have pressed. The Tree Fern grows like a Palm in almost every kloof.

"We have a great variety of Lilies and Orchids. The *Arum Lily* is very plentiful in moist places, though the prettiest is a pink and white striped one which grows in great clusters, and which the natives dry and eat when short of food. When in blossom I used to

have bunches, which the Kaffirs bring for a few matches, all over the place.

"A few months ago we had a flower more common than the Primrose in Sussex, but double the size and more like a *Primula*. The country is now a deep pink with a flower that grows like a Foxglove, only the petals are thick and waxy. That is the drawback in pressing flowers here, the flowers being mostly of a waxy nature. This is a fine country for anything to grow provided seedlings get a fair start before being put out in the sun. I have started a number of plants by sowing in the ordinary way, but no sooner they begin to show than the sun scorches them. I tried by putting matting over, but if only left off for a few minutes they are destroyed.

"The *Granadillas* (a Passion-flower with eatable fruit) are covering the place. Young Peaches are forming, and four of our Banana trees are in fruit. We also have Pawpaws ripe, like a Melon in appearance and shape, but grows on the stem of a tree 20 feet high; of *Granadillas* we have a cartload.

"The red leaf enclosed makes a very pretty hedgerow; the plant from which it was taken grows very thick, about 3 feet 6 inches high. Any slip will grow, and in a very few months makes a heavy bush. It produces feathery white blossoms twice a year and is an ever red, never losing any foliage. The green and white kind is a variety, how caused I cannot tell, as on the same root half may spring up red and half the green and white. It is easily trimmed with a sickle or bush knife.

"I expect some Oranges this year. Wattles, Gums, and *Pinus insignis* do wonderfully well and grow at a tremendous rate. Gums grow 15 feet a year, but in the first year we lose about three out of five from white ants, and about five out of ten afterwards.

"I have found a very pretty wild flowering plant which makes excellent garden edging. It is a Daisy as large as a *Marguerite*, but only grows about 8 inches high. It is a free bloomer and has much improved by cultivation.

"We have a scarlet *Marguerite*, very showy, which grows a few miles off and which I want to try in the garden; also a large bright yellow flower as large as a *Chrysanthemum* and like a *Dandelion* in looks, only a brighter colour and about six times the size, growing about 18 inches high.

"My patch of Sunflowers was not a success for food use. The plants grew beautifully, but 80 per cent. of what should have been seed had no substance—merely husks.

"Business is very quiet, and I think we shall have to take to farming. I am going to try Coffee and Tea, as I fancy from report the country is suitable for them, though I think they have not yet been tried. Cotton is spoken well of on the flats."

I sowed seeds of the coral-pink Grass, but the seedlings perished quickly after commencing growth. The seeds of the Sensitive Plant did not germinate. Some other seeds sent were described as belonging to a climber that had round white scented flowers as large as a plate, and locally called the "Moonflower." Seeds of it germinated, but do what I would after growing the plants about 2 feet they suddenly flagged and some started again from the bottom, but all eventually died. I have the red leaf and green and white leaf, but do not know the botanical name of the plant.—J. H. VERRALL.

[We are very much obliged to Mr. Verrall, and we quite agree with him in thinking that the citations in question will be perused with interest by many of our readers.]

APPLE WINTER MAJETIN.

WITH this I enclose for your inspection some Apples, the fruit of which is described to me as remaining on the tree till March, and then being fit for use. In a walled garden by Friar Street, Sudbury, stands a tree from which these Apples were gathered. The leafless branches are covered with a good crop of fruit, only very few being blown down by the violent gale about a fortnight since. The tree is quite healthy, and I should say from ten to twelve years old. It appears to be budded close down on the ground, or it may be raised from a "burr knot," a not uncommon practice in Norfolk and Suffolk. In appearance it resembles the old Kent sort called "French Crab," but it differs in one or two particulars.—THOMAS BUNYARD.

[The Apple is Winter Majetin—a good culinary variety in use till May, preserving its deep green colour. "This variety," says Dr. Hogg, in the "Fruit Manual," "is, strictly speaking, a Norfolk Apple, where it is much grown for the local markets. It was first made public by Mr. George Lindley, who introduced it to the notice of the London Horticultural Society. In the 'Guide to the Orchard,' it is stated that the *Aphis lanigera* or 'mealy bug,' so destructive to most of our old orchard trees, seems to be set at defiance by the Majetin. 'An old tree now growing in a garden belonging to Mr. William Youngman of Norwich, which had been grafted about 3 feet high in the stem, has been for many years attacked by this insect below the grafted part but never above it, the limbs and branches being to this day perfectly free, although all the other trees in the same garden have been infested more or less with it.'"]



NATIONAL CHRYSANTHEMUM SOCIETY.

WE are requested by the Hon. Secretary to state that, owing to severe illness, the Treasurer of the National Chrysanthemum Society is unable to sign the cheques for the payment of the prize money awarded at the December Show, and some delay in forwarding the same within the specified time is therefore unavoidable.

CANTERBURY CHRYSANTHEMUM SHOW.

WE have been asked to announce that the Canterbury Chrysanthemum Show will take place on November 14th and 15th, at the Foresters' Hall.

INCURVED JAPANESE CHRYSANTHEMUMS.

MR. E. BECKETT on page 561, last volume of the *Journal of Horticulture*, states that "he cannot understand 'Beginner' (p. 497) accusing the winner of a first prize at the Reading Chrysanthemum Show exhibiting unfairly." He will see, however, on the same page that I had made a slight error. Perhaps as the matter is under discussion he will kindly state why the stand containing Léon Frache and Mdle. Marie Hoste was not disqualified?—BEGINNER.

CHRYSANTHEMUM AMERICA.

IN speaking of this single flowered variety "W. S.," page 579 last volume, says, "That such a beautiful sort should have escaped attention so long is a matter of surprise and regret." I presume he is thinking of himself only, as the numerous qualities possessed by this charming variety have long been known to cultivators of this type of the Chrysanthemum. For years I have appreciated this variety, and advised others to grow it for flowering at Christmas. Perhaps "W. S." has only just "taken up" the cultivation of these charming members of the Chrysanthemum family; if this be so I am glad he has found out their value.—E. M.

CHRYSANTHEMUMS MRS. L. C. MADEIRA AND MRS. JEROME JONES.

I ENCLOSE a bloom each of Mrs. L. C. Madeira (incurved), and Mrs. Jerome Jones (Japanese incurved), two of the best of these classes I know of for Christmas decoration. Both are very dwarf in habit and free in blooming, the former carrying six and the latter twelve blooms each. These will make grand exhibition varieties, but must be stopped in March to make them break sufficiently early for the November shows. Mrs. Jerome Jones is a first favourite in America. I hope to see it shown in England next season. The colour is a glistening marble white when taken on the earlier bud, and has very broad stiff florets.—W. WELLS.

[The flowers sent were fresh and of a fair size. Mrs. L. C. Madeira is a bright orange yellow, and a useful addition to the incurved varieties. Mrs. Jerome Jones will doubtless also become a popular variety].

JUDGING AT EDINBURGH.

I HAVE just read Mr. Rushton's letter on page 578, last volume of the *Journal of Horticulture*. Regarding the appointing of an "expert," allow me to say I had nothing whatever to do with the appointing, and never have dreamt of doing such a thing. I was made aware that an expert had been asked to point the stands, and saw his figures when he had done so. The expert states, according to your editorial note, that "he was desired, but not officially appointed, to examine the collection;" and I am perfectly certain that he was not "desired" by any member of the Committee, either officially or privately. Mr. Rushton, in his accusation, declared that "the Secretary afterwards told the protestors that the Committee acknowledged the misjudgment." This I still most emphatically deny; and I told Mr. Rushton frequently that I declined to express an opinion officially, or take any other steps than those I had taken.—ROBERT LAIRD, Sec.

[Some of our readers have suggested that the "expert's" view would be interesting.]

I AM sure there are few exhibitors who will fail to sympathise with Mr. Rushton. He states the case so clearly (p. 578) that I cannot see how he could be blamed for lodging a protest against the award of the officials. As a rule I deprecate protests on these said grounds, but there are circumstances which alter the conditions; as for instance, when an exhibitor and others see flagrant acts committed, how can he be expected to remain silent? I should have thought that the Judges would have before this had something to say relative to the justness of their award. As a rule competent men never decline to discuss the accuracy of a verdict when approached in a proper manner. I thought also the Committee had power to ask these officials how they arrived at their verdict, but it seems the Judges hold absolute sway in the Edinburgh case, right or wrong. This state of affairs does not appear to me to be quite as it ought to be, neither in the interests of exhibitors or the Show itself. I for one will consider that a blunder really was made in the absence of a denial from the Judges themselves. Silence is condemning in this particular case certainly.

I am not in favour of upsetting the verdict of Judges twenty-four hours after it is given. If such a practice became anything like common there are numerous instances where it would entail dissatisfaction. If such a practice were followed protests without number would be made. If the Judges of the Japanese blooms at the November Show of the National Chrysanthemum Society were condemned in the same way, I think they would have troubled little about the protest. I allude to the second prize in the 48 class. The blooms in this particular stand "fell away" very decidedly on the second and third days of the Exhibition, as compared with those in the two stands placed third and fourth in the same class. Although the award was freely commented upon at the time, I do not say that the Judges made a mistake. I only make allusion to this particular case to show the fallacy of basing an allegation upon the appearance and condition of certain blooms upon the second or third day of a show instead of the first.—AN EXHIBITOR.

DECORATIVE BRITISH FERNS.

THE POLYPODIUMS.

ALTHOUGH the number of species of Polypodium in the world is very large, embracing plants of considerable range of size and form. The family is one of the more easily distinguishable when in fructification, the spore masses which are found upon the frond backs being invariably round or oval, and quite destitute of any cover, while all other genera with uncovered spores have them either in lines along the veins, in masses evenly spread of the surface, or forming terminal panicles as on *Osmunda* and *Anemia*. No better example of this typical fructification could be afforded than our own common Polypody (*P. vulgare*) upon the frond backs of which the rich golden heaps of spore capsules are often so conspicuous as to constitute it a veritable golden Fern.

Our native species of this tribe are few, and belong to two very distinct sections. *P. vulgare*, the most cosmopolitan among them, having plain pinnate or once-divided fronds of dark green colour, and stout texture springing from a creeping rootstock often as thick as one's little finger. These fronds are evergreen, persisting well into the second season, when they drop off at a joint like the deciduous leaves of trees. The spore heaps, too, as we have seen, are large and conspicuous, and of a bright golden colour. The other members of the genus—viz., the Oak Fern (*P. dryopteris*), the Beech Fern (*P. phegopteris*), and the Limestone Polypody (*P. ca'careum*), are all on the contrary quite oppositely characterised, the fronds being twice-divided, of light green colour and delicate texture, springing from a very slender creeping rootstock. The fronds are perfectly deciduous, dying down early in the autumn, and are adherent to the roots until completely decayed.

The spore heaps are numerous, but small and dot-like, uncovered and of a dull brown colour. We therefore see that they are only linked by two characters out of many, but they are essential, viz., the uncovered, dot-like heaps of spores and a creeping rootstock. Curiously enough, though the former feature is the unique distinguishing one of the genus, others of widely divergent type having similar creeping rootstocks, it is the latter which gives the generic name of Polypodium, i.e., many-footed, in allusion to the foot-like appearance of the growing root tips. This anomaly is seen at once when we consider that the so-called Haresfoot and Squirrels-foot Ferns (*Davallias*) belong to another genus altogether. In this case, as in hosts of others, we have to deal with a legacy of anomalous names handed down to us from less enlightened days, and all we can do is to regard them merely as symbols, since the innumerable attempts to improve matters have landed us in a very Slough of Despond of synonyms. It will be seen that in the above lists we ignore one so-called Polypodium, viz., *P. alpestris*, which is a misnomer altogether. In our opinion it is an undoubted *Athyrium*, possessing all the general characters of that family, plus occasional rudimentary spore covers, which no true Polypody ever bears. It also has no creeping rootstock, being built up à la shuttlecock, and, finally it is well-known fact that several plumose *Athyria* bear spores equally destitute of cover, so that to be consistent, they too should be ranked as Polypods.

As a decorative Fern the normal form of the common Polypody is frequently hawked about the streets in baskets made up with moss, and if skilfully so treated and not allowed to get dry, it forms very pretty hanging plants, the creeping rootstocks pushing their way out in all directions. In its native habitats we find it occupying very diverse positions, thriving alike in the forks of old trees, pushing its way through the moss on their trunks, and forming dense masses in the leaf mould accumulated among their gnarled roots. In many parts of the country it absolutely lines the hedge-banks for miles by the roadsides; again, be it observed, revelling in the loose leafy *débris* which accumulates in such places. It is also peculiarly a wall and roof Fern, delighting in loose open rubble in sheltered positions, or existing in a dwarf state in the merest crevices in rough walls and stone dykes. Loose leaf mould and plenty of drainage characterise the habitats of freest growth and teach a lesson to the intending cultivator. The rootstocks keep very near the surface and must not therefore be deeper buried when planting. When thoroughly at home in some shady hedgebank the fronds attain a length of 18 inches, or even more, and have a very graceful appearance.

So much for the common form, but keeping to our theme of "Decorative Ferns," it is to the varieties that we must turn to find what this plant of simple plan is capable of doing when Nature's fanciful fingers have been busied with it. Under her freakish touch it has assumed all sorts of beautiful and curious forms, some of the best of which have been discovered in the Lake district, no less than thirty-five distinct varieties figuring in "The Ferns of the Lake District," edited

by the late Mr. J. M. Barnes, one of our most renowned and successful Fern lovers, hunters, and raisers. In Mr. E. J. Lowe's list seventy-five varieties are catalogued of which seventeen belong to the plumose or extra leafy section, of which the well-known Welsh Polypody (*P. cambricum*) is the type. The best of these undoubtedly is *P. v. var. Prestonii*, found at Zeland, in which the fronds are not only splendidly subdivided, but also somewhat congested, each frond forming a densely overlapping mass of most delicate leafage. In this section Mr. Lowe includes *P. v. cornubiense*, though to our mind the distinction between the others and this is rather too great. In this the whole frond is cut up into fine narrow segments, so much so that the best form of it has been named *P. v. trichomanoides*, from its very strong resemblance to the Killarney Fern (*Trichomanes radicans*). So different is this to the normal that it is difficult to credit it as being a mere sport; a fact, however, which it has a peculiar knack of confirming by throwing up occasionally composite fronds partially normal and partially true to type. Mr. Clapham succeeded in crossing this with a finely tasselled form known as *P. v. bifido-cristatum*, the result being a crested cornubiense showing the tendency to reversion by throwing up a percentage of true bifido-cristatum fronds. A clearer proof of the dual parentage could obviously hardly be afforded. The best forms à la cambricum besides Prestonii are *P. v. Barrowi*, Hadwini, and pluma. *P. v. pulcherrimum* is a splendid form on similar plan, but is of stouter texture and fertile.

A number of very handsome tasselled varieties have been found, and rank very high as decorative plants when well grown in suspended baskets or wide shallow specimen pans. *P. v. bifido-cristatum* already mentioned has long narrow fronds bearing a heavy terminal spreading crest, while minor ones tip the short pinnæ. *P. v. cristatum*, the old form, is simply the normal, neatly tasselled at all terminals. *P. v. cristatum*, *Clewarth*, or *Fosteri* and *grandiceps*, *Fox*, are two infinitely finer forms of same type, the latter especially. A still greater development of cresting is seen in *P. v. grandiceps*, *Parker* (multifido-cristatum), in which the frond is one huge crest very finely comminuted. *P. v. glonillatum*, *Mullins*, is a crested form gone mad, no two fronds being alike in their eccentric ramifications. *P. v. semilacerum*, the Irish Polypody, and especially *semilacerum grande*, are very fine decorative varieties, as also is *P. v. omnilacerum* when in form, which it rarely is. In that case it reaches 2 feet in length, and so hard to beat.

Besides these there are numerous interesting forms of less beauty and interest into which space precludes us from entering. Wherever the plant grows plentifully, which it does in very many parts of the country, it well repays careful scrutiny, even the minor forms of variation constituting pleasant little souvenirs of pleasant rambles, while if a really good thing falls to the hunter's lot he is well repaid indeed.

From the varietal point of view the other British members of the genus already named possess little interest, but for delicacy of verdure there is no Fern capable of surpassing the Oak Fern (*P. dryopteris*). The fronds are of an indescribable moonshiny green, which renders a good specimen in the early spring a thing of beauty and a joy as long as it lasts. Culture is of the easiest in a loose open compost, mainly leaf mould and well drained. It grows apace, and speedily fills pot or pan to repletion. Planted in the chinks of rockwork in cool conservatories it takes care of itself and soon spreads. Its very near relative, *P. calcareum*, or the Limestone Polypody, is much rarer in Britain. It is a more robust grower on precisely similar lines, but its green is not so delicate. The two may always be discriminated by the fact that the stems of the Oak Fern are always bent abruptly backwards at a slight angle where the frond is set on, while on the other it is straight. The uncoiling fronds of the Oak Fern, too, ape exactly just before they unfold the three balls familiar to pawnbrokers; while *P. calcareum* unrolls differently. Neither of these forms has yet yielded a distinct variety. The Beech Fern (*P. phegopteris*) has its fronds bipinnate, the two lowest divisions turning abruptly downwards, giving a barbed appearance to the outline of the frond. Culture exactly as above. It is hardly so plentiful as the Oak Fern, but has yielded one or two sports, *P. p. cristatum* being a neatly tasselled form.—CHAS. T. DRURY, F.L.S., F.R.H.S.

(To be continued.)

SALVIA SPLENDENS.

THE finest plants of this *Salvia* I have seen were at Ugbrook Park, the seat of Lord Clifford, not far from Newton Abbot. The plants were quite 6 feet high, 3 feet through them, and numerous studded with flower spikes, many of them 10 inches and 1 foot long. As may be supposed such grand examples as these during the month of November made a gorgeous display, especially when arranged in a mass together. When we consider the ease with which this *Salvia* can be grown the wonder is that more plants are not seen.

The following is an outline of the culture adopted with such successful results by Mr. Abraham. Cuttings 3 inches long are taken in February, inserted in sandy soil, plunged in a mild heat, where they quickly root. They have their points pinched out, about four times, to induce a sturdy growth and to increase the number of spikes on each. When the pits are cleared of the ordinary bedding plants the *Salvias* are planted out, allowing about 15 inches of space between each. Here they make free growth, and are taken up and placed in 9-inch pots in any ordinary light compost. To prevent the leaves flagging unduly the plants are stood behind a north wall, where they escape the sun's rays, are syringed two or three times daily and housed on the approach of winter.—E. M.



ONCIDIUM CURTUM.

THIS Brazilian Orchid is very useful for winter flowering; spikes 4 feet long, and carrying fifty or upwards of its showy blossoms, render the Orchid house gay during November. In colour it is distinct. The sepals and petals are yellow, barred and blotched with cinnamon brown; the lip golden yellow, spotted towards the margin with dark purple. This *Oncidium* is all the more valuable because it can be well grown in an ordinary plant stove.—E. M.

ZYGOPETALUM ROSTRATUM.

ALTHOUGH this *Zygopetalum* has been in cultivation for many years, it does not appear to be generally cultivated. The flowers, as will be seen by referring to the illustration (fig. 1) are large and of an attractive character. The sepals and petals are white, tipped with brownish purple. The lip also is white, with purplish crimson veins starting from the base. The engraving has been prepared from blooms of a plant exhibited on December 12th, 1893, at the Drill



FIG. 1.—ZYGOPETALUM ROSTRATUM.

Hall, Westminster, by Messrs. F. Sander & Co., St. Albans, and for which the Orchid Committee of the Royal Horticultural Society adjudged an award of merit.

DECIDUOUS CALANTHES.

DECIDUOUS *Calanthes* have for some weeks past been in flower, and in order to have a fine bright colour in *C. Veitchii* I find it is necessary to keep the plants dry at the roots and near the glass in a temperature of 60°. The blooms are of better substance and more lasting when they are allowed to expand in a comparatively cool temperature, and, moreover, they last much longer after being cut. Cold draughts must not be permitted to blow on them at any time. Grown in light turfy loam larger pseudo-bulbs and stronger spikes are produced than when peat is used. Whilst growing they require also plenty of heat and atmospheric moisture, also feeding with liquid manure made from sheep or deer droppings.—W. S.

CULTURE OF CALANTHE VEITCHI.

Of all the plants that belong to the Orchid family, there is not one more useful or easy of cultivation than this *Calanthe*. In a cut condition the flowers are perhaps more generally admired and employed, the absence of foliage militating against the general use of the plants. If the pots are arranged amidst a base of Maidenhair, or other low-growing Ferns, intermixed with a few well-grown Palms, such as *Kentias*, *Cocos Weddelliana*, or *Geonoma gracilis*, about 2 feet high, a good effect can be obtained. An excellent way of arranging them is in a mass in a sloping form on each side of a narrow span-roofed house, having a path in the centre.

Our plants occupy a position in the late vinery, the Grapes having been cut to admit of the *Calanthes* being accommodated. A vinery in midwinter would not perhaps be considered by some a suitable site to flower Orchids in, but the fact of their flowering so satisfactorily under these conditions convinces me more than ever of the usefulness of *Calanthes*. The spikes show to great advantage if cut with their whole length of stem and arranged lightly in suitable vases along with graceful greenery. There is nothing better for this purpose than a spray of the dark bronzy coloured *Berberis aquifolium*, this colour forming a really good base for the *Calanthe* blooms. To give additional lightness, amongst the *Mahonia* foliage some fronds of Maidenhair Fern should be inserted. They are also useful for bouquets. The colour is especially pleasing when in good condition—a rich rose; even then in density the colour varies, owing mainly to cultural conditions. In districts much addicted to fog and want of light the colour is often a pale lilac. The height of the flower spikes varies according to the treatment given the plants. In some instances they do not reach more than 15 inches high, while in others they attain a height of 3 feet, and even more. Well developed spikes will average thirty blooms to each. At the present time we have some single spikes with twenty-eight developed blooms and four unopened buds, the spikes being 2 feet 10 inches long. The length of the pseudo-bulbs also varies considerably for the same reason as does the flower spikes, but mainly these are influenced by the methods of culture practised. Sometimes they are not more than 6 inches high, and again they grow 1 foot and of proportionate thickness, which means strong or weak flower spikes, as the case may be. It is useless to expect large, fully developed flower spikes from half-starved, weakly pseudo-bulbs.

Considering the ease with which this *Calanthe* can be grown, and its usefulness when in bloom, it is surprising that more of them are not seen in better condition in private gardens of small pretensions. A moist warm atmosphere during the time they are making their growth is necessary for the development of good foliage and stout healthy pseudo-bulbs. A temperature which ranges from 65° to 70° by night, and rises to 85° during the day, accompanied with shade to the plants and a position near the glass, are the salient points in their culture. A shelf near the roof in an ordinary stove, Cucumber or Melon house, will answer very well. A position so near to the glass that the foliage will be burnt during the summer is to be deprecated, the scorching of the leaves under such conditions being attended with results not to be desired when flowering time comes round. When growing in a moist atmosphere the foliage is rather susceptible to scalding, owing to sudden bursts of bright sunshine. Various sized pots may be employed, according to the purpose for which the plants are required. We pot our *Calanthes* in different sizes, four of the largest being placed in 7-inch pots, and as many of the smaller size into 5½-inch pots. One strong pseudo-bulb is sometimes put into a 4½-inch pot. Such plants come in useful in a variety of ways when they are required for certain positions in the dwelling house. When greater masses of flowers are needed, eight pseudo-bulbs should be employed in 9-inch pots.

The middle of February is a good time to repot this *Calanthe*. The pseudo-bulbs by that time will be making fresh roots, the soil for some time previous having been kept quite dry. Thoroughly shake the old soil out of the roots. The pots should be quite clean and half filled with crocks; in the case of the largest sized pots a few additional crocks will be needed. It is an essential point to maintain the drainage in a perfect condition. Over the crocks place a layer of rough loam. The compost that answers well is one of three parts fibry loam, one of partly dried cow manure, but not much decayed, with a free addition of sharp silver sand and charcoal to keep the whole porous where the loam is of a heavy nature. Place the pseudo-bulbs in the soil sufficiently deep to allow of them standing erect, and no more. If the soil is moist give no water until they show signs of new growth, except it be a sprinkle with the syringe to maintain moisture about them. After potting, the pots in our case are packed closely

together on the stage over a water tank in the Cucumber house until growth is well begun. Afterwards the pots are stood on a shelf, either in the same house or in a similar position in the plant stove, and shaded from bright sunshine, otherwise they receive all available light.

When the growth has fairly commenced, abundance of water is given to the roots. Where possible use rain or softened water; and when roots are freely made weak liquid manure is supplied every alternate watering. The plants are syringed at least twice daily, which tends to keep the foliage clean. If a base of coal ashes can be provided for them on the shelf during the summer so much the better. A top-dressing of freshly gathered cow manure at a time when the bulbs are swelling freely and the foliage developing will be of much service, adding to the luxuriance of the foliage and increasing the strength of the flower spikes. When the growth is made, and the new pseudo-bulbs ripening, water should be gradually withheld both from the roots and foliage. I would, however, warn cultivators of little experience to be careful in this detail; if the water supply is suddenly limited the foliage will prematurely decay. I like to see some at the time the flower spikes are opening. Towards the autumn the flower spikes will protrude from the base of each pseudo-bulb. The soil should be kept moist at this stage, and when the plants commence to unfold their flowers provide a dry atmosphere, combined with a cooler temperature, say 50° to 55° by night, with a rise of 10° during the day, although two or three degrees higher at both periods will not interfere with their development properly. A lower temperature than that named, along with a moist atmosphere, would cause the flowers to become spotted, and eventually decay prematurely. Under favourable conditions the flowers last in beauty fully three months, our plants commencing to unfold the lower blooms early in November. The spikes at the present time, December 28th, are not yet fully developed.—E. MOLYNEUX.

[Some spikes of bloom we received from Mr. Molyneux were remarkably fine, and indicated that the system of culture detailed above is an excellent one, which may advantageously be adopted by other growers.]



THE WEATHER IN LONDON.—Changeable weather has characterised the past week. Severe frosts and local fogs were prevalent on Saturday and Sunday, but Monday was milder and tolerably clear. Tuesday was for the most part dull and cold, with snow showers. Wednesday opened cold, and with a wintry aspect.

— THE WEATHER IN THE NORTH.—The weather of the past week was less variable than that of the preceding one. The 27th ult. was a gloomy day, and the evening very wet. The following four days were dry and pleasant, the former part of the 31st especially so; but the afternoon was colder, and a heavy shower fell in the evening. New Year's Day was fine with a slight touch of frost throughout the day and night, and Tuesday also was a fine seasonable day.—B. D., *S. Perthshire*.

— ROYAL GARDENERS' ORPHAN FUND.—Gratifying as is the public support given to this charity, unfortunately the claims on its resources are greater than can be met. The Secretary had an excellent record to place before the Committee on Friday last, in the form of upwards of £110 in special contributions; but he had also a list of eleven new applicants, making eighteen in all for election, but one of these was not considered eligible. Amongst the contributions were £35 15s., the proceeds of a concert at Altrincham, sent by Mr. W. Plant. The following sums were also sent from autumn shows:—Reigate, £20; Rugby, £6 17s. 8d.; Bristol, £6 11s. 4d. and Leighton Buzzard, £6 11s. Personal donations amounted to £16 5s., and the proceeds of collecting boxes £18 14s. 2d., including £7 4s. 5d. from Mr. Jones of Lewisham, as resulting from his Chrysanthemum Show. The month's record shows how much may be done towards a good cause by a combination of effort by sympathetic helpers in various ways and districts. Only five children can be elected as recipients of the charity at the annual meeting to be held at the Cannon Street Hotel on 9th February. The annual dinner is proposed to be held, subject to the convenience of the Lord Mayor, on 10th May.

— **THE GARDENERS' ROYAL BENEVOLENT INSTITUTION.**—The fifty-fifth annual general meeting of the members of this Institution will be held at Simpson's, 101, Strand, London, W.C., on Wednesday, January 17th, 1894, at 3 P.M., for the purpose of receiving the report of the Committee and the accounts of the Institution for the present year, electing officers for the ensuing year, and other affairs; and also for the purpose of placing fifteen pensioners on the funds. The annual friendly supper of members and friends will also be held at the same place, and on the same date, at 6 P.M., tickets for which may be obtained on application to the Secretary, Mr. George J. Ingram, at the office, 50, Parliament Street, S.W.

— **THE EARL'S COURT EXHIBITIONS AND PRIZE MONEY.**—Mr. Harry Turner informs us of the death on the 20th inst. of Mr. W. Hay, who was Financial Director of the Earl's Court Exhibition. He caught cold through joining in the Lord Mayor's procession on November 9th, influenza supervening. Mr. Hay was a very genial man, and was known to several of our readers. Though there may be still more delay in completing the financial arrangements it is expected that the prize money due to exhibitors will be paid, as undoubtedly it ought to be, with as little delay as possible.

— **WOLVERHAMPTON FLORAL FETE.**—This important provincial Show is announced to be held on the 10th, 11th, and 12th July. The money is increased by about £20. Prizes will also be offered for displays of Roses, allowing small Palms, Ferns, and mosses to be used. A somewhat similar class is provided for hardy garden flowers. Mr. Lutz has again promised a gold medal for Pansies, and other classes are added to the schedule. The Committee have now a reserve fund of over £1800, though various large sums have at times been voted from the funds for special improvements in the park.

— **WE learn from a daily paper that the Botanical Department of the South Kensington Museum has received a valuable acquisition. Mr. Lehmann, one of Her Majesty's Consuls, has presented to that institution the specimens of flowers which he has collected during many years' residence in Ecuador and British Columbia. They include many kinds with which European specialists are totally unacquainted. In particular, the Orchids are of extraordinary variety.**

— **THE SEASON.**—A Sussex correspondent writes: "I do not know whether we are going to have the same forward season that we had last year; but there is some evidence to that effect, for my Tulip bed is so advanced that some of the plants are already through the ground, and will very shortly be generally so. This is most unusual, as we never expect to see any appearance of growth before February. Last year everything was a month earlier, and there is some indication that it will be the same this year. We have yellow Crocus in bloom, and also the Winter Aconite and Snowdrop, together with yellow Wallflower and purple Stock."

— **MARGUERITE CARNATIONS.**—I would like to corroborate your correspondent's, "W. C.," remarks (page 572, last volume), respecting the usefulness and adaptability of the Marguerite Carnation as a pot plant and cutting. Some weeks ago I had an occasion to pay a visit to the well-kept gardens at Moor Top House, Ackworth, when to my surprise I saw a number of these useful plants in full flower. The colours were varied and bright, and deliciously sweet-scented. These Carnations seem particularly well adapted for pot culture for an autumn or early winter display. Mr. Ketchell, the head gardener, informed me that they had been growing in pots outdoors all through the summer, and under similar treatment described by your correspondent.—J. E.

— **PRESERVATION OF COMMONS.**—The Board of Agriculture call attention to the recent Act of Parliament amending the law relating to commons, with a view to their better preservation and in connection with previous enactments. "By the Law of Commons Amendment Act, 1893, lately passed, it is enacted that an enclosure or improvement of any part of a common purporting to be made under the Statute of Merton and the Statute of Westminster the second, or either of such statutes, shall not be valid unless it is made with the consent of the Board of Agriculture. By the 31st section of the Commons Act, 1876, it is provided that any person intending to enclose or approve a common, or part of a common, otherwise than under the provisions of the Act, shall give notice to all persons claiming any legal right in such common or part of a common, by publishing at least three months beforehand a statement of his intention to make such enclosure, for three successive times, and in two or more of the principal local newspapers in the county, town, or district in which the common or part of common proposed to be enclosed is situate."

— **DEATH OF PROFESSOR BENTLEY.**—With much regret we announce the death, on the 24th ult., at 91, Warwick Road, Earl's Court, of Professor Robert Bentley, a botanist, who has more particularly directed attention to the application of botany to medicine. He was born at Hitchin, Herts, in 1825, and became a member of the Royal College of Surgeons in 1847. He was Dean of the Medical Faculty, Honorary Fellow and Professor of Botany in King's College, London; Honorary Member of and Professor of Materia Medica and Botany to the Pharmaceutical Society of Great Britain; Honorary Member of the American Pharmaceutical Association; Professor of Botany in the London Institution; Examiner in Botany to the Royal College of Veterinary Surgeons; Member of the Council and Chairman of the Garden Committee of the Royal Botanic Society of London; and was formerly Lecturer on Botany at the Medical Colleges of the London, Middlesex, and St. Mary's Hospitals. Professor Bentley was President of the British Pharmaceutical Conferences in 1866 and 1867, and was for many years one of the Editors of the *Pharmaceutical Journal*. He was also the author of numerous books, including a "Manual of Botany," and, in conjunction with Dr. Trimen, he brought out an illustrated work on "Medicinal Plants," in four volumes. The funeral took place on Saturday last at Kensal Green. The first portion of the burial office was said with imposing ritual at the church of St. Matthias, Earl's Court, by the Rev. Jonas Pascal Davidson, and among those present were Mrs. Bentley (the widow), Mr. Bentley, Mr. A. Shaw, the Rev. R. C. Kirkpatrick (who conducted the service at the cemetery), the Rev. J. Outram Marshall, the Rev. H. Westall, Mr. J. W. Cunningham (representing King's College), Dr. Atfield (representing the Pharmaceutical Society), Mr. Goodsir, and Mr. Hobbrow. The coffin was covered with wreaths, including one from the members of the Guild of St. Luke.

— **PLANTING TREES.**—A somewhat advanced politician writing on the unemployed question, makes the suggestion that much labour might be found at this time of year in planting trees on our bare, and, in many cases, at present absolutely unprofitable soils. The proposal has the merit of being a most practical one, and commends itself to horticulturists. We seem of late very much to have neglected tree planting, taking little thought of the needs of those who are to come after us. Yet trees are rarely other than profitable in the long run if well cared for. Still further, they serve in the most efficient way to bring barren, sour, or poor soils into a condition of sweetness and fertility. To meet the unemployed requirements we need have sturdy forest trees planted by the million; but there are vast areas of soil that would be better employed than at present if so planted. Would that the suggestion could nationally be acted upon speedily.—D.

— **AYRSHIRE HORTICULTURAL SOCIETY.**—The annual general meeting of this Society was held in Carrick Street Hall last week. In the absence of the President (ex-Baillie Hill, who was indisposed) Mr. Wilson of Auchencruive was called to the chair. The Secretary and Treasurer's reports were duly read and approved of. The Society's books were produced with vouchers, and certified to be correct by the Auditors, Messrs. J. M. Rodger and J. D. Graham. The books showed that the drawings at both the autumn and winter Shows were less than last year, causing a deficit of £8 7s. 1d., and thus reducing the balance at the credit of the Society to £101 15s. 11d. Mr. Wm. Burns intimated his retirement from the post of Hon. Secretary and Treasurer. The members present having expressed their regret at losing the services of their Secretary, who by his zeal and untiring efforts these last eleven years had brought the Society to such a high state of excellence, the Chairman, in name of the subscribers of this Society, thanked him, and acknowledged the debt which the Society owed him.

— **A NOVEL EXHIBITION.**—A daily contemporary says that an Exhibition is being held in Portland Street, Manchester, of a new method of public decoration. A great variety of real flowers and plants are preserved in such a way by a patent process that their natural colours and form are retained and protected against the weather. A room in the form of a garden was laid out with grass plots, flower beds, and walks. The entrance is by three arches built in trellis work and real flowers and grasses. At the further end of the room there is a collection of devices of the sea, made entirely of flowers, including a ship's bridge, pennant in colours, life buoy, and life belt. On the front of the bridge was a shield bearing the arms of the city. In the centre of the garden is a large cut crystal fountain lighted by electricity, which is intended to give a practical illustration of the ability of the flowers to resist rain. There are columns festooned with garlands of natural flowers, draperies tied up with bouquets, and long curves of pendant grasses of various colours.

— WE learn from the "Victorian Naturalist" that Baron von Mueller has withdrawn from the directorship of the International Academy for Botanic Geography of Le Mans.

— A NEW PARK FOR LONDON.—It is reported that a new park for the south-east of London has been secured by the purchase of the Hilly Fields, Lewisham. The area of this open space is 45 acres, and the sum paid £43,300.

— MR. W. C. DRUMMOND, a well-known florist, and the proprietor of the Bath and Park Lane Nurseries, recently died at Charles Street, Bath, at the age of seventy-seven years. Forty years or so ago Mr. Drummond was a Dahlia cultivator and exhibitor.

— MR. GEORGE HAWKINS, who was gardener to the late Colonel Turbeville at Ewenny Priory for eighteen years, desires us to state that he is now gardener at Hendrefoilan, near Swansea, Mrs. Turbeville having taken this residence, formerly the home of the late Mr. Dillwyn, M.P.

— MR. F. BURVENICK, SEN.—We learn that a Royal Resolution of December 3rd, 1893, decreed the Civic Cross of the first-class to Mr. Burvenick, Professor at the State School of Horticulture, Ghent, in recognition of the valued services he has rendered to the school during a career of more than thirty-five years.

— EARLY STRAWBERRIES.—Mr. E. Parry, The Gardens, Castle-mans, Twyford, Berks, sends us some Vicomtesse Héricart de Thury Strawberries, as a sample from a dish that he gathered on New Year's Day. It is a very good sample indeed, the fruits being quite as large as many as we have seen gathered in March.

— CONVEYING FRUIT.—According to a circular issued by Mr. Marshall Stevens, manager of the Manchester Ship Canal, which was formally opened on Monday last, a saving of from 6s. 3d. to 10s. 9d. per ton will be effected by sending fruit through the canal from Liverpool to the large towns in the Manchester district. The trade of imported fruits will therefore be favourably influenced by the change in transit.

— PRIMULAS A. F. BARRON AND KING OF THE PURPLES.—These double-flowered varieties are valuable for giving flowers for cutting, as they last a long time in water. The colour of the first-named is pleasing—white, edged and suffused with lilac; the flowers are very double. King of the Purples is a good companion, and should be grown. So free is this Primula that it sometimes flowers itself to death, as it were.—E.

— THE DEATH OF THE REV. DR. GORDON took place recently at Birnie, Morayshire. Dr. Gordon, who was ninety-three years of age, had the degree of LL.D. conferred upon him by the University of Aberdeen in 1859, and made considerable botanical, geological, and antiquarian researches. He published, in 1839, "Collectanea for a Flora of Moray," and contributed a series of papers on botanical and other matters to various magazines.

— TECHNICAL EDUCATION IN NORTHUMBERLAND.—We understand that a most useful course of lectures in horticulture is now being given at different centres in Northumberland under the auspices of the County Council. The course consists of four lectures, embracing instruction in all branches of a subject so necessary in rural districts, and illustrated by numerous diagrams and lantern slides. Mr. Jas. Wilson, jun., F.R.H.S., St. Andrew's, is the lecturer.

— MESSRS. DOBBIE & CO.'S EMPLOYEES.—We are informed that on Friday last the annual social meeting of the employés of Messrs. Dobbie & Co., Springfield Nurseries, Rothesay, N.B., was held in the Lesser Public Hall. Mr. Robert Fyfe presided, and there was a large attendance, numbering over 120. Addresses were delivered by the Chairman and Mr. W. Cuthbertson and others. Songs, readings, and instrumental selections were also given, and an enjoyable evening was spent.

— WINTER FLOWERING PELARGONIUMS.—In one of the green-houses attached to Lord Clifford's garden in Devonshire I noted some remarkably well flowered Pelargoniums during the middle of November. So profusely were they bloomed that a mention of their names may be an advantage to others who require similar masses of colour at that time of the year. The sorts I observed were Sophia Birkin, round flower, compact truss, free, mottled salmon in colour; Souvenir de Carpsia, semi-double, rose; Belle Nancienne, oculated, semi-double; Guillon Mangilli, double, cerise; and the well-known varieties, Favourite, Rev. F. Atkinson, Col. Holden, and Dr. Jacoby were exceedingly well flowered.—E. M.

— THE PAINTINGS IN THE NORTH GALLERY AT KEW it is stated will not be on view for some time to come. At the instance of the Director of the Royal Gardens the charming paintings of the late Miss M. North were recently examined by experts, and it was considered desirable to take precautions to protect them from atmospheric influences. The pictures are now being cleaned, varnished, and glazed, so that they will be preserved.

— DEATH OF MR. R. SPRUCE.—We regret to learn of the death, which took place on December 28th, at Castle Howard, Malton, of Mr. Richard Spruce, the botanist and traveller, aged sixty-six years. The deceased was the son of a schoolmaster on Lord Carlisle's estate, and his early botanical researches led Sir William Hooker, Humboldt, and other leading scientists to take an interest in him. In 1849 he was sent to South America in the interest of Kew Gardens, and his mission developed into an important scientific and commercial investigation, extending over fifteen years. Mr. Spruce was one of the pioneers in the introduction of the quinine-yielding tree into India.

— THE FLORA OF GREENLAND.—We have to acknowledge the receipt of a pamphlet entitled "A Contribution to the Flora of Greenland," by Mr. William E. Meehan, and reprinted from the Proceedings of the Academy of Natural Sciences, Philadelphia. The author accompanied an expedition to Greenland in 1892, and made collections of plants in various parts of the country. He says:—"The abundance of Lichens is characteristic of the Flora of Greenland. Rocks supposed from a distance to be naturally coloured are found on closer inspection to derive their hue from a complete investiture of some Lichen. Mosses are even more abundant than Lichens. They grow in such vast quantities in spots that their light or dark greens are visible often for some miles away, brightening the otherwise bleak shores wonderfully. Their persistence in growth under apparently adverse circumstances is also remarkable. No obstacle save the sea seems sufficient to stop their progress. Even dead glaciers have been and are being buried under the steady march of these cryptogamous plants. Mosses fulfil the same duty in Greenland that other forms of plant life perform in more favoured climes, and the amount of rich vegetable matter being deposited by them may be of great value in the future to that great arctic island." Many flowering plants and trees were also noticed by Mr. Meehan, and these are described in paragraphs similar to the five that follow.

— PAPAVER NUDICAULE.—Common everywhere in Greenland. A remarkably variable plant. On the table land, back of McCormick Bay (Prudhoe Land) a white flowered form is somewhat common; it has a more compact habit and smaller flowers than the yellow or more prevalent form. On Wostenholm Island the compactness of growth is particularly marked. The number of petals varies, and the margins are not unfrequently fimbriate. In the vicinity of Disco the peduncles are hairy. At Upernavik forms with hairy and smooth peduncles grow together.

— DRABA HIRTA.—Varying remarkably in different localities. At Disco more tall and slender than at Etah. In company with Papaver nudicaule, Dryas, several Ranunculi and other flowers, with a luxuriant growth of some Hypnum, it formed a striking feature in the flora of a "Nunatak," or snowless peak, arising out of the Verhoeff glacier.

— LYCHNIS APETALA.—Remarkably variable. Sometimes with quite showy petals. Flowers often singly on scapes, at others in five-six flowered capitate heads; and again with flowers scattered along the stems. One specimen at Inglefield Gulf close to the front edge of a receding glacier, which spot had been covered by solid ice within a year or two.

— BETULA NANA.—Common in company with the arctic Willow at Disco and southwardly, growing about 6 inches high, and forming tufts of several feet radius. It is found from Cape Farewell to Ducks Islands, the south border of Melville Bay. This is probably its limit. I found it no further north. Saved for fuel by the South Greenland Esquimos.

— SALIX ARCTICA.—Average height 6 inches, but spreading often to 6 feet in circumference of its branches. But its short stem grows quite thick. At Disco I saw one with the short trunk as thick as one's wrist, hanging from a crevice in a rock. Grows at all altitudes from the beach line close to the ice cap. In Inglefield Gulf found large old plants up to within 20 feet of a receding glacier, and on a spot which had certainly been covered by ice less than two years before. There were no lateral or medial moraines to bring the plants, and all the facts on the spot led to the conclusion that the Willows had been buried when the glacier flowed over the spot, and had been dormant until the ice receded. Professor Heilprin coincided with me in this conclusion. Catkins used for tinder.

— SNOWDROPS.—It appears that Snowdrops may be obtained during seven or eight months in the year. I hear of *Galanthus nivalis* being in flower in various parts of the country, but we are later in Scotland, and need not expect them so early. I have been much interested in Snowdrops of late, and more so since Mr. S. Arnott presented me with bulbs of half a dozen sorts. For a month past I have

[COSTUS IGNEUS.

At the meeting of the Royal Horticultural Society on December 12th, 1893, Mr. W. Bain, gardener to Sir Trevor Lawrence, Bart., Burford Lodge, Dorking, exhibited some dwarf plants of *Costus igneus*, on which much interest was centred. From these plants the illustration



FIG. 2.—COSTUS IGNEUS.

been watching seven or eight sorts, one said to be *G. plicatus*, but which Mr. Arnott says is hardly likely to be *plicatus*, although it has the plicate leaf. This opened its petals on December 29th. *G. icariæ* showed signs of flowering much earlier, but the flower was destroyed; it is very rare. *G. Scharloki* seems to be a few days later, so is *G. Elwesi Olympus*. *G. Elwesi* and a seedling of my own raising are in bud, and from these I shall cross-fertilise for the purpose of lengthening the flowering period, and if possible improve the flowers.
—W T

(fig. 2) has been prepared, and it will be seen that this *Costus* merits more attention than is usually given it. The flowers are flat, of a rich orange colour, and are usually borne in clusters on the top of the stems. The leaves also are of an ornamental character, and are produced in crowded masses, as depicted in the engraving. Like most of the *Costus*, this species thrives best in a stove, heat and moisture being essential to its successful culture. A first-class certificate was awarded for the above mentioned plant by the Floral Committee of the Royal Horticultural Society.



HYBRID TEAS.

ON page 559 (last vol.) "W. R. Raillem" has an interesting note on the above. It is a question upon which I feel rather strongly, and I would like to make a few comments upon the subject. Like "W. R. Raillem" I am desirous of being loyal to the decisions of the majority. As an attending member of the Catalogue Committee I may say that we had much discussion regarding several varieties, and the pretensions of Victor Verdier to a position among the so-called Hybrid Teas was brought forward. I do not endorse that part of the general report where it is claimed that several foreign trade growers have followed the Society's lead by introducing a separate section for Hybrid Teas. Both German and French growers were pioneers in this respect, not followers.

What is a Hybrid Tea? This is a very pertinent question when we note the many inconsistencies of the present list. If a cross between Teas and Hybrid Perpetuals, then most decidedly we have omitted several. I think the difficulty of forming a class between the two main sections of Teas and Hybrid Perpetuals is one which might well have been avoided. I believe I am correct in stating that the necessity arose through a feeling of the General Committee that some provision should be made for a class devoted entirely to this growing section. Viscountess Folkestone and others were barred from the Teas and Noisettes, and yet could not be exhibited in the classes set apart for Hybrid Perpetuals. By the way, there are no classes entirely for Hybrid Perpetuals now; but they did exist, and may again. It was also contemplated to frame a class entirely for the H. Teas; hence the necessity for deciding which kinds were to be included. Personally, I must say I am far from satisfied with the result of our labours in this direction. I do not think the latter part of your correspondent's opening paragraph is so inconsistent as it appears. With the Teas and Noisettes we have become so intermixed that there is absolutely no distinction; they have been shown together for many years; and it is hard to name a variety in one class which could not be duplicated in the whole of its characteristics by a selection from the other.

It was necessary to do something, but I fear we have not hit upon the best plan; not only for the present but the future. If the definition of a Hybrid Tea is a cross between the two classes then we have failed to sift them out thoroughly, and if this is to be a guide we shall soon have this middle class a complete mixture; some crosses favouring one parent much more than the other. We have lumped the Teas and Noisettes as a way out of that difficulty. Then why not do so with the Hybrid Perpetuals, Hybrid Teas, Hybrid Chinas, and Hybrid Bourbons? In what way does Paul Verdier, Charles Lawson, Blair No. 2 and others differ from selections we could make from the Hybrid Perpetuals? I would even include the true (?) Bourbons, and call them all hybrids of Roses.

At present the number of classes makes it difficult to find many of our best Roses. Until the National Rose Society decided the question one might pick up the catalogues of our leading growers, and find several remarkable differences of opinion. We surely did not want a new class entirely. I see much confusion in the future, and only the small present benefit of knowing which varieties will be recognised as Hybrid Teas in the class or classes I believe it is intended to form for them. As the question has been opened by a member of the sub-Committee, I am glad of the opportunity to give these few notes. At some personal inconvenience and expense I attended all but one meeting (when questions were to be brought forward upon which I did not feel competent to vote), and I am sure our labours were heavier than those who are not in the habit of framing a catalogue would imagine; but I am afraid we have over-classified our floral queen.—PRACTICE.

CRITICISING THE CRITICS.

It is I know rather a dangerous practice to criticise what other correspondents may have written, still some will rush into danger sometimes, and I for one take a plunge. However, I do so in a kindly spirit, just because I desire to elicit, so far as may be possible, facts and truths. A correspondent, "A Fruit Grower and an Exhibitor" (page 573, last volume), having undertaken to set another right on some points in fruit culture, and having made public his criticisms on replies to certain questions, I follow suit.

First, is canker in fruit trees principally caused by the roots penetrating into bad subsoil? The fruit grower replies, Yes; then adds that strong growers worked on free stocks are rarely affected. But is not such a reply practically a contradiction? If the roots getting into bad subsoil produce canker, how is it that strong growers on free stocks, the roots of which equally get into bad subsoils, are rarely affected with canker? I agree with the first cause so far as it goes, but then it should have applied to particular varieties, which notably canker, whilst the strong growers are certain other varieties that do not canker. How is that distinction explained? Only on the hypothesis that some sorts require as foods manurial compounds that others do not, or have in

abundance, or can find, whilst others starve. No doubt Mr. Abbey will say that some varieties are more susceptible to fungoid attacks than others, hence canker. I am, however, dealing with "A Fruit Grower's" replies solely now, and I think "A Member of a Gardeners' Association" must have felt that the answer to the first query needed much amending.

Then in relation to the second query, as to the inactivity of roots of fruit trees, Vines especially, during the winter. We are told that practically, if not literally, they are inactive. Now, on that head I would ask, What ground have we for assuming that tree roots, even when the heads are apparently at rest, are really inactive? Of course it is so concluded because the trees are, so far as we can discern, performing no active function. We must not forget, however, in dealing with this subject, that whilst tree heads in the winter are in a low temperature, roots remain in the ground under precisely similar conditions all the year. The earth is rather colder, it is true, but after all, at some 12 to 18 inches below the surface how much cooler is the soil now than it will be next April, when leafage develops? Can we prove that, even although the winter roots may not be performing important functions? I think they do, if for no other reason than that Nature utilises the winter chiefly for giving to the soil its greater portion of moisture, and if roots remain practically inactive, or as it were stagnant, during the long winter season, it is easy to suppose that they would decay. We can understand roots becoming absolutely inactive in great drought because they can only operate in a moist soil, and find in such soil plant food. Our only reason for assuming that roots are inoperative in the winter is that we see no results of their activity. But if we lift deciduous trees in the winter, lay them in for a few weeks, then lift again, do we not always see ample evidence that roots have been active although the trees do not show it above?

The answer to the third question is of necessity dependant on that given to the preceding one. As my own opinion is that roots are always active, I prefer to hold that top growth on Vines follows rather than precedes root action. That artificial warmth in the case of forced Vines is essential for the production of leafage there can be no doubt. Light cannot be by any means so important a factor in growth production as is generally assumed, as it is found easy with suitable warmth to obtain robust growth and leafage on Vines in January, whereas in a state of nature they would not leaf until May. It is therefore obvious that given heat allied to such indifferent light as Nature furnishes in the winter, growth and foliage can be had at any time. We may too remember that the soil is practically as dark to roots in May as in January. Light becomes an important factor in plant growth when leaves and fruit have to be matured, but in the matter of generating leafage at the first, it comes a long way below heat.

With regard to the giving of liquid manure to fruit trees just previous to coming into bloom, it would seem as if this query must apply to trees in pots, as it seems so unlikely that fruit trees would need any special waterings so early as the month of April, when outdoors most trees are blooming, and those on walls often in March. But, perhaps, though not so stated, the query applied to fruit trees under glass. Obviously, in this case, trees ought not to need watering just then, for there has been so far very little strain on the roots for foliage production, and if Nature's course in giving the bulk of her moisture to trees in the winter has been followed in houses, though unfortunately it seldom is, by then the trees ought to want no special watering until the fruits were well set. Of course, trees in pots need constant waterings, but even in their case liquid manure will be found most useful after there is ample leafage and the fruit is developing, as no form of manure is so quickly operative as is that given in liquid form.—A. D.

REMARKS BEARING ON FRUIT CULTURE.

ANYTHING relative to the above is always interesting, especially if Vines are included in the question. I note at page 573, in last week's Journal, "A Fruit Grower and Exhibitor" is asked, Do the roots of Vines start into growth before or after growth has commenced? In my opinion your correspondent has given his querist the proper answer, and if he wishes a practical proof of it he can easily have it if he has any pot Vines under his charge. If he will turn one of the Vines out just as the buds are bursting into growth he will observe that there is no root action; but wait until the third leaf is showing, when there will be from 4 to 6 inches of growth made, turn the Vine out again, and he will see that the roots are beginning to move.—R. M., Somerset.

NOTES ON EUPHORBIAS.

MR. G. PARRANT contributed a very interesting article on these desirable winter flowering plants on page 555 of the last volume of the *Journal of Horticulture*, the cultural points in which many readers will be found to agree. Euphorbia jacquiniæflora is undoubtedly difficult to root successfully from cuttings, at least with those who are unprovided with good convenience for propagating purposes, including bottom heat, and if the rooting process is slow the after progress is invariably poor. What is wanted is a steady bottom heat and a close-fitting propagating frame. More than ordinary attention is usually paid to the preparation and insertion of cuttings, which are always soft, and emit a milky fluid on being separated from the parent plant. Many growers insert the ends in dry sand or powdered charcoal to absorb and prevent an excessive loss of sap. I have followed this course with varying success, but the best plants I have ever had were from cuttings obtained from a gardening neighbour, and not subjected to the treat-

ment above mentioned. Of the several cuttings then obtained not one failed to root freely, and eventually formed vigorous and free-flowering specimens. This seemed to point to gain, more than otherwise, from the loss of stored sap in the cutting previous to its insertion.

Poinsettias are often subject to the same course of treatment in the cutting stage, indeed I know of cases where a special hotbed is made for rooting cuttings of these in the early summer months. Those who have a Cucumber house in which a good heat is maintained will find that the cuttings root with fair certainty when dibbled thinly in the soil, with or without the aid of a hand-light. If the Cucumbers do not completely shade the cuttings resort must be made to paper to prevent the sun reaching them. They lift better when put into turf than is the case when leaf mould or other light materials are used, because the roots are more compact, and the soil adheres to them more securely. There is some gain in placing them under the shelter of a close frame after being thus lifted for potting, because this prevents flagging, which is sure to occur if exposed to airy surroundings. There may be advantages in devoting a house to them in the summer, but it is not often that a house can be spared that would be suitable.

Mr. Parrant advises that the early variety of *Poinsettia pulcherrima* only be grown if a mass of colour is desirable at one time. This, I think, should depend on whether the display is desirable at an early or late period of the winter. If a good mass of colour is required at Christmas and in January the late form certainly is the one that should be given preference to, the earlier kind being by that time getting past its best. Under good culture quite as good a show may be had from the one as the other, and bracts of greater breadth may be obtained from the late one because of the irregular form of its head. At Heywood Mr. Robinson had splendid plants prepared for furnishing at the festive season. They were grown from cuttings, the old stools after the desired number of cuttings are obtained being thrown away. They are mostly in 6-inch pots, and being furnished with healthy foliage to their base they are well adapted for the purpose for which they were intended. A few plants were kept indoors throughout the summer, but the much greater length of stem obtained from this course of treatment does not bear out the advantages claimed by Mr. Parrant, because for such tall plants a varied employment cannot be made in the same proportion as that of dwarf ones, and there is no gain in the size of bracts apparent in the case of those kept in the house at Heywood.—W. STRUGNELL.

VIOLAS.

I HEARTILY agree with your correspondent "J. B. R." (page 558, last vol.) in his protest against "the constant influx of so-called novelties;" but how is it to be checked? I have at times raised my "mild protest," and sometimes a stronger one, for I have felt, and very strongly too, that many varieties sent out ought to have been thrown to the rubbish heap from the seedling bed instead of being distributed as acquisitions.

My chief object in compiling the annual summary of seedlings to be sent out, and which I have seen, for publication in your columns has been to try to help amateurs in making selections from the new sorts which they do not see, or perhaps only to a very limited extent, but which come under my notice. I do not wish to pose as a duly qualified judge of their merits, still it is an undoubted fact that many varieties which have been introduced are of very questionable merit in the opinion of Viola cultivators in general. I have frequently been met with the argument that individual tastes are so varied, especially amongst ladies, that all have to be catered for; and what "J. B. R.," myself, and others may look upon as inferior kinds find favour with some growers.

"J. B. R." alludes to some varieties sent out three years ago which are now discarded from some collections. This is so, undoubtedly, but the "some" is not all. Let us take *Chrysanthemums* for instance, and what a host of the newly introduced kinds are "lost to sight" three years afterwards, again in *Zonal Pelargoniums* and other popular flowers; and what are we to say as to *Fancy Pansies* with a yearly introduction of from eighty to over 100 new varieties? I am preparing my notes of the new *Fancy Pansies* I have seen, and which are being sent out, or will be next spring, and I am bewildered, for they are so numerous. What a host of those sent out even two years since are *non est* in collections!

The truth is the general public believe in novelties, and tire of growing the same sorts year after year, excepting for special bedding purposes. But "J. B. R." is wrong in saying that Viola specialists "are now sacrificing everything for large flowers," for that is not the case, although some kinds thoroughly merit his condemnation as they certainly do have mine. We are getting in some varieties too much of the Pansy breed, and when this is so, the flowers run large, and these cross-bred varieties fail to find a place in my affections. "J. B. R." instances as a type of Viola raisers should aim at in habit and character, such as *Ardwell Gem*, *Duchess of Fife* and *White Duchess*. What is wanted on the part of raisers is to preserve this type as much as possible, and by crossing these and others with the miniature or *Violetta* section. But in such sorts as *Bullion*, *True Blue*, *Skylark*, *Countess of Hopetoun*, and *Countess of Wharnclyffe* we have model types of close growing, early and continuous flowering kinds which cannot be dispensed with, although the *Countess of Hopetoun's* flowers are large under good cultivation, but we have no other white to equal it in every point, and who can doubt its immense popularity?

Blooms of *Sylvia*, a variety alluded to by your correspondent, were sent to me by Dr. Stuart before being sent out, and on referring to my notes I find it described as "*Sylvia* and *Sylvia's Rival* have a very close resemblance to *Countess of Hopetoun*, and the last named is the whitest; and *Bridal Wreath*, all run very close together in colour, size, and form." I feel that I may safely say that no other person sees so many new varieties before they are sent out as I do, for many of the raisers send me flowers, as they say, for my opinion, this I always give them in writing; and at the close of the season you have been so kind as to publish year by year my notes as to which I think are the best. I suppose raisers have some confidence in my opinion or they would not take the trouble to send their blooms, but I always wish I could see the plants growing so as to note their habit also. I am sure of one thing, that many other seedlings would have been sent out but for my condemnation of them.

I have now given up raising seedlings, but more than one of mine are still amongst the best, notably *True Blue*, the best by far of all the Blues, and *Bridesmaid*, for I am not able now through failing health and age to attend to this work. My great aim has always been to work for rayless varieties, self coloured as far as possible and entirely free from any blotch or marking in the centre of the flower, of dwarf and compact habit, very early and continuous bloomers, of good constitution, and retaining the smaller flowers and habit of *Ardwell Gem*, *True Blue*, and *Duchess of Fife*.

Personally, as an old *Viola* grower, I heartily thank "J. B. R." for so timely drawing our attention to this subject, and all florists and those who take an interest in floricultural work owe grateful thanks to the Editor of the *Journal of Horticulture* for always being ready to give publicity to our views and so readily show great interest in helping us on in our work. Some of the older correspondents have passed away and others of us must soon follow, but we see with great satisfaction that many younger men are coming to front as true florists. May they one and all, and the *Journal* also, experience a prosperous new year.—W. DEAN.

JOTTINGS FROM DUBLIN.

TRINITY COLLEGE BOTANIC GARDENS.

MR. F. W. BURBIDGE, the talented Curator of these Gardens, is perhaps as well known in England as in Ireland. It was a distinct pleasure to me to meet this estimable man and hardy plant lover in his own domain as it were, I having been most pleasantly associated with him a few years since on this side of the water. Mr. Burbidge was most anxious to show us the most striking features of this wonderful garden in the short space of time at disposal. The first object to attract our notice was a magnificent bush or tree of *Garrya elliptica* growing on the grass, its branches sweeping the ground all round. Fully 30 feet in diameter and 20 feet high was this specimen, and in the picture of health, being loaded with its catkin-like blossoms. Close by was an exceedingly venerable looking *Arbutus Unedo*, its stem the size of a man's body, far and away the largest tree of its kind that I have seen growing. Against a wall having a southern aspect many interesting shrubs both evergreen and deciduous were growing. For instance, *Colletia spinosa* was 12 feet high, *C. horrida* (*C. ferox*), and *C. Bictoniensis* (*C. cruciata*), also in splendid condition. *Pittosporum Mayi*, a dense bush 10 feet high, with shiny green leaves and pleasantly smelling bark was most interesting. *Berberidopsis corallina* was growing in a variety of situations with a view to testing the requirements of this somewhat fickle yet handsome wall climber. A moist subsoil and slightly shaded from the fierce noonday sun seems to suit it the best. *Chimonanthus fragrans* was, as is generally the case this season, flowering somewhat early. Many other choice and rare shrubs I noted, but time would not admit of a close inspection.

Rockery plants, as is generally known, are a decided feature here. *Edelweiss*, as I have never seen it before, was growing luxuriantly. *Ramondia pyrenaica* was firmly established on the top of a low wall, and scores of seedlings were springing up in the most unlikely of places—the face of the wall—having established themselves in the crevices where a particle of moisture could be obtained. *Arenarias* of sorts were seen in profusion clinging to the wall in the small hollows therein, showing the adaptability of this genus to situations sparse of soil. *Saxifragas* were common enough, and so was *Gentiana verna*, but Mr. Burbidge finds some difficulty in flowering *G. acaulis*. A 6-feet square bed of *Cyclamen europeum* at the base of a low wall was a gorgeous sight; even in winter the marbled beauty of its foliage was delightful, hundreds of seedlings testifying to the rapid manner in which this *Cyclamen* increases. In warm nooks I noted varieties of *Narcissus*, *Crocus hyemalis*, and *Galanthus corcyrensis* in flower (November 23rd). Mr. Burbidge is famed for his collection of the former, having some hundreds of varieties. *Polyanthus* in separate colours, especially the yellow, I noticed were largely grown, their merits for spring flowering being fully recognised. Mr. Burbidge makes an excellent use of *Tellima grandiflora rubra* by planting it as an edging to the shrubberies and herbaceous borders, where its brightly coloured leaves show to advantage during the autumn and winter months. A very interesting collection of *Ivies* I also noted, such varieties as *dentata*, *Regneriana*, *conglomerata*, *Golden Irish*, *hastata*, *himalaica*, *atropurpurea* (the black-leaved Ivy), and *azorica*, which latter is well adapted for planting in a cold conservatory.

A very hurried run through the numerous houses devoted to Orchids,

Ferns, and other plants not often met with outside a garden of this kind revealed the fact that good health is everywhere apparent. Chrysanthemums receive some attention, an abundance of flowers being preferred to a few of individual quality. The plants were grouped together in masses of one colour, making quite a pleasing effect, so distinct from the usual plan. Excavations were going on for the building of a house to accommodate the many Tree Ferns, which sadly need extended space. Within a stone's throw of the garden Mr. Burbidge pointed to a building where the iron was cast for building the large Palm house at Kew.

GLASNEVIN BOTANIC GARDENS.

A quick drive past some of the many open spaces which Dublin is favoured with, through some of the most busy and fashionable streets in the city, and by the only penal establishment in the country, brought us to Glasnevin—the Kew of Ireland. One cannot help but notice the prim neatness of the grass, paths, shrubs, and trees the moment the gardens are entered. We were unfortunate in not finding the courteous and able Curator, Mr. Moore, but his trusty lieutenant, Mr. Pope, quickly made us feel at home at once by the geniality of his manner. No wonder Mr. Pope proved so able a pilot, when I gathered from him that forty years of his life had been spent in this garden. The large lean-to house filled with Chrysanthemums was the first inspected. Instead of following the prevailing fashion of cultivating the plants for the production of large blooms, a few to a plant, the system known as the "bush" method is that practised. Perhaps it would be more correct in saying they were naturally grown, for in the majority of instances I noted they had not been stopped at all, but allowed to grow freely and flower in the same manner without any disbudding. From six to seven hundred plants there must have been in this one house, and a mass of colour they produced, the like of which I have not seen before. Not only are new varieties grown, but older and deserving favourites like James Salter and Bouquet Fait were to be seen, rendering the groups all the more interesting, as it afforded means of comparison between the older and newer sorts.

House after house literally crammed with all conceivable kinds of plants were passed through. Camellias deserve more than a passing note, so healthy did they appear. New Holland plants are a feature, and of these Mr. Moore may justly be proud. Orchids are indeed a speciality here, many houses being filled with them, and all testify to the treatment received. Want of space forbids details of them being given, but I cannot omit a mention of the splendid *Calanthes*. The colour of the blooms representing the Veitchi type were especially rich. *Cypripediums* are a feature in themselves, so well is this genus represented. The large Palm house erected but a few years since is now almost filled, so rapid has been the growth of the plants. Ferns are extremely well grown, and in such numbers that it is difficult to imagine any variety not to be found here. Filmy Ferns enjoy a house to themselves on the north side of the garden, and is well worthy of a visit by all lovers of this section. Bulbous plants, such as *Lachenalias* for example, are growing in large numbers and variety, rendering the different houses quite gay in their turn.

A mere glance only could be given to the outside plants. The herbaceous department I thought very extensive, judging from the number of beds and space devoted to this branch. Much regret I had to confess at the brevity of my visit to this fine garden, but hope for an extension next time.

PHOENIX PARK.

A sharp drive past the huge Cattle Market and the recruiting establishment of the Royal Irish Constabulary brought us to Phoenix Park. Here but a glance could be taken of that part known as the People's Garden, which is in itself a feature, so admirably is it laid out and managed. The deer strolling leisurely about on the footpaths and roads in a public park was a sight unique to me. A mere glance in the direction of the Viceregal Lodge had to suffice with the deep regret that daylight did not admit of my making the acquaintance of that estimable man and good gardener, Mr. Smith, who my guide informed me has always much of interest to show.

From the Chief Secretary's Lodge a rapid drive was taken the whole length of the Park out at the main entrance, where we caught a view of Kilmainham, past Guinness's Brewery—a town in itself—over the river Liffey (not noted for its purity of water), past Dublin Castle and the O'Connell Monument, and back to our starting point, the Grosvenor Hotel. The last few miles our spirited nag had taken us with but one trace, and appeared quite as fit to repeat the journey of twenty-five miles if necessary.

I fear these jottings may contain a few imperfections, but as having made no notes beyond mental ones, the mistakes (if any), I doubt not, will be passed over indulgently. I desire to express my thanks to all concerned for rendering my first and brief visit to Dublin so interesting and enjoyable.—E. MOLYNEUX.

CULTURE OF LIBONIA FLORIBUNDA.

WE have few plants flowering at this time of the year more elegant and attractive than *Libonias*, and as their cultural necessities are of the simplest description, it is a pity they are not more generally grown. Their uses are many and varied. One-year-old plants in 5-inch pots are very useful for intermixing with Zonal *Pelargoniums*, a bright and

pretty effect being produced. Larger plants are excellent for cutting from, and the length of time they produce flowers is remarkable. The blooms when cut are admirable for large or small vases and epergnes; the colour is telling, and they last well in water.

Early in January cut back a few plants that are past their best, and put them in a house having a temperature of about 65° or 70°. This will cause them to break freely. When these shoots are about an inch or so in length they can be taken off and dibbled in about 2 inches asunder in pots in a propagating frame or under hand-lights in a warm house. In a fortnight or three weeks these will be rooted, and will need to be hardened a little, and pinched preparatory to being placed in small pots. After potting keep close for a few days, when a shelf near the glass in the same house will be the best position for them, topping them frequently as they grow, which they will do rapidly. Water rather sparingly until the roots are well through the soil and filling the pots, when they will require a more liberal supply.

When ready for their final shift they must be potted firmly and stood in a light frame or on the front stage of a vinery, and grown without a check until the end of July, when they should be gradually hardened and stood out of doors in a sunny and sheltered position to ripen the growth. A neat stake should be put to each plant, and the leading growths loosely tied, as at this stage they are very brittle, and apt to be blown off if not supported. They may remain out of doors until September, when they should be taken inside, and can be induced to flower as required. A rich porous compost is necessary. Two parts fibry loam, one each of leaf mould and horse droppings, and a good dash of clean coarse sand will suit them well. From the time they have filled their pots with roots until they are in flower occasional waterings with liquid manure are necessary.—H. R. RICHARDS.

THE CHRISTMAS FLOWER MARKET.

"SUCH a smother of flowers at Christmas has never been known before," said a leading grower in Covent Garden the other morning, and, standing in the middle of the market, it certainly was easy to believe it. As a matter of fact, however, it has been possible to say this of almost every Christmas for many years past. Year by year the market continues to grow, and there must be at least five times as much trade done here now as there was five-and-twenty years ago. The public taste for flowers and for floral decorations has greatly developed, the numbers engaged in the trade have multiplied very considerably, and prices, of course, gone down. Not so very many years ago the height of the summer trade could not have shown anything like such a profusion of blossoms as did the Saturday morning preceeding Christmas, though, of course, the flowers would have been somewhat different. The Christmas trade has been quite exceptional. A mild open season is always good for the business, so far as the generality of buyers are concerned in it. People will not stand in the streets to buy flowers in frost and snow, and it is difficult to display them with biting winds and sharp frost nipping to pieces the foliage and blooms that have been coaxed to unfold in the genial warmth of the greenhouse. All the busy thoroughfares in all parts of London have been veritable flower gardens, and greengrocers' and fruiterers' shops have been almost as well supplied as in June and July.

The special feature of this Christmas market has been its Chrysanthemums. The flowers this autumn came on in great profusion, and the frosts were so late that everybody was able to get a fine show of bloom under glass before they were any of them nipped off, and by keeping them a little back they have been made to hold out for Christmas, and have thus supplemented the enormous supply of Arums and Hyacinths, Tulips and Marguerites, Cyclamens and Lilies of the Valley, and so on, that are always grown for this season's trade. So enormous has been the supply that growers have been many of them wishing that half of it had been caught by the frosts. After the manner of the farmers, they are apt to grumble when flowers are few that they have nothing to sell, and when they are plentiful that they can get no prices. The only thing that could render a Covent Garden flower dealer really happy would be a season that spoiled all the flowers but those he had the luck to save. Plenty of flowers at good high prices are really the desiderata, but certainly the market on Saturday morning hardly gave the impression that anybody could have been indulged that way this year. There were some things that appeared to have done very well. One grower from Hoddesdon, for instance, Mr. Beckwith, had brought in nearly 800 bunches of deliciously fresh Roses—between 9000 and 10,000 blooms—and within an hour or two every blossom was cleared off at satisfactory prices. About 1000 bunches of Lilies of the Valley, and 1200 bunches of cut Chrysanthemums, besides Tulips and Hyacinths, Bouvardias, and so forth, were also disposed of before the bell rang for the closing of the market. It was a wonderful sight presented as one turned into the market from the bleak and sloppy streets in the early hours of Saturday, and it was difficult indeed to realise that it was the depth of winter, and that the enormous gathering was for Christmas decoration.

Between seven and eight o'clock, although the stock had been dribbling away for an hour or more, the great floor and the stands rising from it were so choked with foliage and flowers, and the throng of buyers so great, that it was difficult to squeeze one's way about, and the precincts of the market all around were blocked with carts and vans and cabs and costermongers' barrows heavily laden with Ferns and

evergreens, and masses of the loveliest blooms, for the most part white. White flowers are at all times the safest to grow for the market, as there is always a demand for them—funerals and weddings and church decorations keeping up a steady requisition all the year round. The white Narcissi and the Christmas Roses—the Hellebores—were wonderful in their profusion, and the great Trumpet Lilies—*Calla æthiopica*—were very fine. Of coloured flowers the most striking were the magnificent reds of the Gardenias, the vivid yellows of the Chrysanthemums and of some of the Narcissi, and the scarlet of the common Pelargoniums, which have had this winter exceptional opportunities of doing well since we have had so little fog. These flowers cannot endure fog, and, however carefully they may be coddled up with heat, they will not bloom satisfactorily unless they get plenty of sunshine also. Under fog their blossoms damp off into a poor purple. Scarlet Pelargoniums always fetch a high price at this time of year, but they were not very conspicuous in the market. Stocks and Carnations and Heliotropes, Mignonette and Violets, Wallflowers and vast quantities of Ferns, and Palms, and Dracænas, and many other things combined to render the market fragrant and beautiful, and though to turn out in the dead of winter in time to be in the thick of the business requires some little resolution, and the costermongers and flower women are not the pleasantest of people to elbow one's way amongst, the sight



FIG. 3.—GOMPHIA DECORA.

for once in a way well repays one. The next great display of the year will be the Saturday before Easter, for which hundreds of vast glass structures all round London are already preparing.—("Daily News.")

GOMPHIA DECORA.

A NORTHERN correspondent sends us a spray, as represented in the illustration (fig. 3), of this useful winter flowering plant, and "wonders why it is not more extensively grown." So do we, for small plants of *Gompia decora* are useful for decorative purposes. When grown in pots in warm conservatories or stoves the bright yellow flowers, which are freely produced, have a very cheerful effect amongst the foliage plants that usually predominate in such structures. It is easily grown,

but is seen to better advantage in a small state, say in 48-size pots, than when of larger size, and to maintain a stock of suitable plants a few cuttings might be rooted occasionally. Light turfy loam with a little peat or, preferably, good leaf soil, will form a compost adapted to the requirements of the plant. Some attention is needed to keep the plants clear of insects, mealy bug and scale being the chief enemies, but these can be readily destroyed.



FRUIT FORCING.

Peaches and Nectarines.—*Earliest House.*—The trees started last month are now in blossom. When the flowers are fully expanded the night temperature may be maintained at 50° to 55° in mild weather (5° less when the weather is severe), 55° by day as a maximum in severe weather by artificial means when the sky is overcast, 65° by day from sun heat, and if the air be mild a few degrees more may be allowed with free ventilation. Syringing the trees must cease—always in dull weather—when the blossoms show colour, but a genial atmosphere should be secured by damping the floor and border in the morning and early afternoon of bright days, having recourse to an occasional sprinkling of such surfaces only in dull weather. Ventilate freely when the external conditions are favourable, and when the pollen is ripe choose the warmest and driest part of the day, preferably before or within an hour of the sun passing the meridian, for aiding its distribution by shaking the trees or trellis, or taking a camel-hair brush or feather and gently applying the pollen to the stigmas. If there be a deficiency of pollen of any variety it may be taken from those that afford it plentifully and applied to the stigmas of the flowers sparsely furnished with that essential of fertilisation and securing of a good set of fruit. The inside border must not be neglected for water, but avoid making the soil sodden by needless applications, especially of liquid manure, and afford sufficient protection to the outside border for the exclusion of frost.

Second Early House.—The house containing trees of Hale's Early, Stirling Castle, Royal George, or Dymond Peaches, with Lord Napier and Elrue Nectarines to afford ripe fruit at the end of May or early in June, should now be started. Damp the trees and house two or three times a day, but the former must be allowed to become fairly dry before nightfall, and in dull weather the syringing should be omitted, or had recourse to occasionally only. Turn the heat on in the morning so as to secure 50° through the day, ventilating at that temperature, and allowing it to rise from sun heat to 65° with free ventilation. Sufficient fire heat at night to maintain a temperature of 40° to 45° will bring the trees on quite fast enough. The inside borders must be brought into a thoroughly moist condition by repeated waterings, but where the roof lights have been removed water will not be required until the fruit is set and swelling freely. The outside border should be protected with litter—all that is wanted is a covering to prevent chill from snow and the soil being frozen.

Later Houses.—These should be put in order forthwith, and if any trees are swelling the buds more rapidly than is desired, a covering of mats over the lights will prevent the temperature being raised by sun heat to a great extent, and the flowering will be retarded considerably. Where the roof lights have been removed the buds are as yet quite dormant, and the lights may remain off until the time arrives for starting the trees, or in the case of late houses until the buds commence swelling. Pruning may then be effected and the lights replaced, which will not be required until the end of February, or later.

Cherry House.—The house having been closed as advised last month, or if the trees have not yet been started, they must be set to work at once to have the fruit ripe with certainty early in May. Fire heat may be employed to maintain a temperature by artificial means of 40° at night and 45° in the day, advancing 10° by sun heat, ventilating at 50° and closing at that point. Sprinkle the trees occasionally in dull weather, and in the morning and afternoon when bright. Ventilate very freely in mild weather, and avoid hasty treatment in the early stages of growth. Examine the trees carefully, and if there is the least trace of aphides fumigate the house repeatedly, or syringe the trees with some approved insecticide for the thorough extirpation of the pests. Trees in pots must not be neglected for water, supplying it repeatedly, if necessary, to thoroughly moisten the balls through to the drainage.

Melons.—Sow s3ed at once for the first crop. The seeds may either be sown singly in 3-inch pots, or a dozen or more be placed round the edge of a 6-inch pot, to be afterwards shifted to 3-inch pots. In the first case, the pots should only be about half filled with soil, covering the seed about half an inch deep, plunging the pots in a bottom heat of 80°, and covering each with a pane of glass, which must be removed so soon as the plants appear. In the other case, the pots should be three parts filled with soil, covering the seeds with fine soil and a square

of glass until the seedlings appear. Two parts good fibrous loam and one part leaf soil mixed, and neither too wet nor too dry, but moderately moist, forms a good medium for germination and for ramification by the young rootlets. It is important that the soil be sweet and fine, and the pots efficiently drained; but the rough parts of the compost answer for the smaller pots. Drawing the plants up weakly must be prevented by keeping them near to the glass. Most every grower has his particular favourite seedling; those who have not will find the following satisfactory:—Scarlet-fleshed: Blenheim Orange and Sion House. Green-fleshed: Eastnor Castle and Golden Perfection. White-fleshed: The Countess and Hero of Lockinge. Ripe fruit from a sowing made at this time may be expected at the close of April or early in May; but this is only possible in well heated structures and with favourable weather. A temperature of 65° to 70° at night and 70° to 75° by day is suitable, with 10° rise from sun heat.

Cucumbers.—Young plants coming into bearing should not be overcropped, and they will be assisted by removing staminate as well as superfluous flowers as they appear. Plants in bearing will require to be examined at least twice a week, removing all weakly and exhausted growths, reserving as much of the young growths as there is room for them to expand their foliage, overcrowding tending greatly to disaster, inasmuch as it must end in denuding the plants of a large extent of foliage. Stop the shoots at one or two joints beyond the show of fruit, allowing young plants more freedom, yet keeping the trellis evenly covered without overcrowding. The temperature at night should be 65° to 70°, 70° to 75° by day artificially, with a rise of 10° or more from sun heat, admitting a little air at 80° if the external air be moderately warm and soft, but if cold and sharp it is better to allow the temperature to advance a little higher than admit too much dry cold air even when the sun is powerful. Close early in the afternoon, so as to utilise the sun heat, a temperature of 90° to 100° from that source being beneficial than otherwise. Root action will be encouraged by light top-dressings of turfy loam and sweetened horse droppings in equal parts, sprinkling a little superphosphate over it occasionally. Water or liquid manure should be supplied as required, but avoid excessive supplies, and be moderate in damping down and syringing at this season. Sprinkling the floor and other surfaces in the morning and afternoon with light syringing on very fine days will be sufficient.

Where winter Cucumbers are not grown or the supply from April forwards is obtained from frames, seed should now be sown for planting next month, either in houses or manure-heated pits or frames. The fermenting materials for the latter should now be in course of preparation for making up the beds. If no convenience exists for raising the plants a bed of fermenting materials should be made up forthwith, the seed to be sown as soon as the bed affords a suitable temperature of 70° to 75° top heat, and 85° bottom heat. Plants from this sowing will be available for house planting to afford a supply of fruit from about the middle of April through the summer. Telegraph and Cardiff Castle are good varieties.

Strawberries in Pots.—The earliest plants must not be pushed too rapidly, especially in severe weather, 50° to 55° at night being sufficient for those that were started at the beginning of last month, and 60° to 65° by day; but it is better to err on the safe side, therefore 5° less in the absence of sun, the weather being cold, is advisable. Scrutinise the plants closely, and if any aphides are found fumigate the house, so as to destroy the pests before the flowers appear. Mildew sometimes fastens on the opening buds; in that case dust with flowers of sulphur. Place more plants on shelves in Peach houses or in vineries started about this time. The pots should have the drainage rectified if necessary, the surface soil removed or freed of moss or other matter, and be washed clean. A top-dressing may be given of rich material—say horse droppings rubbed through a half-inch sieve, with a pinch of some chemical manure sprinkled on the surface. La Grosse Sucrée, Vicomtesse Héricart de Thury, Noble, Auguste Nicaise, and President are suitable varieties for introducing now.

THE KITCHEN GARDEN.

Tomatoes.—Those who have healthy plants trained not far from the glass ought to take good care of them, as it is from these the earliest supplies of fruit can be had. If the leading growths have room to extend there will soon be strong bunches of well formed flowers opening on these, and a few side shoots being laid in, these also quickly commence flowering. More than ordinary care should be taken in pollinating these early flowers, transferring the pollen from the stamens to the stigmas being perhaps the surest if most tedious process, this being done towards mid-day. A dry atmosphere is essential to the well doing of Tomatoes. Keep enough heat in the hot-water pipes to prevent the thermometer falling much below 55°, and give a little air during mild days, a considerable increase in the temperature during the daytime always being accompanied by fresh air. If these precautions are taken there will not be much disease to contend with, a moist atmosphere with or without much heat being the sure precursor of an attack, while low temperatures militate against the quality of the ripening fruit, and are not unfrequently the cause of a total collapse of some of the plants. Any planted out in beds or fairly large borders must be sparingly watered; in fact, should not have been given any water for the past eight or ten weeks, according to circumstances. Any well rooted in pots will naturally require more water, and when swelling crops should be fed freely.

Insect Pest and Diseases.—The white fly, or *Aleyrodes vaporariorum*

is a terrible pest in many establishments, especially where Tomatoes are grown all the year round. A thorough clearance of Tomato plants is desirable in extreme cases, though this will not wholly get rid of these tenacious insects if there are any other kinds of plants at hand on which they can exist for a time. Nothing short of painting the hot-water pipes with sulphur mixed with milk and making them as hot as possible repeatedly for a fortnight, keeping the house close shut at the time, will effectually destroy the pest. The sulphur fumes have apparently no ill effects on the plants, but quite spoil any flowers opening or expanded, and the remedy should, therefore, be applied as early in the season as possible, or be delayed till a good crop is set, the first alternative being most commended. It is also worthy of note that the extra heat and sulphur fumes are also of service in getting rid of fungoid diseases.

Sowing Tomato Seeds.—If seeds are sown at once and the plants are kept growing strongly or without a severe check it ought to be possible to have ripe fruit from them in April, or early in May at the latest, in close succession to those obtained from the old plants or any small plants kept through the winter in small pots, and shifted into their fruiting quarters during this month. Pot culture answers best for these early crops in most private as well as market gardens, and for this purpose Early Ruby and Challenger are admirably adapted. Sow the seeds very thinly in well drained pots, pans, or shallow boxes, using light sandy soil, and place on a brisk hotbed to germinate. Before the seedlings become badly drawn raise them well up to the light, and if there are any signs of their being too thick thin out freely. When well into rough leaf they may be shaken out, and either placed singly in 2½-inch pots, or if the heat of the house seldom falls much below 60° they may be either placed singly in 5-inch pots, or in pairs in 6-inch pots, sinking them to the seed leaves in either case. The sturdiest plants are usually obtained when the larger pots are used, the necessity for an extra shift being also obviated. Give the plants the benefit of a little bottom heat after potting, water sparingly at first, and directly they recover a fresh green colour raise them to the light once more. If clean healthy cuttings can be had, these may be placed singly in small pots, and quickly rooted in a brisk bottom heat. Should there be any vapour in the frame or handlight used frequently wipe the glass dry or leave a chink of air on. At this period of the year plants raised from cuttings should be ready for their fruiting quarters considerably earlier than any obtained by sowing seed.

Carrots and Radishes.—Not much is gained by sowing seed of these in December, especially when a long spell of frost is experienced in January. What both kinds need is a gentle bottom heat and as much light as can safely be admitted to them, the start being made now with a shallow frame on a hotbed formed with a mixture of fresh leaves and stable manure, the latter being required for livening up the leaves as well as for keeping them well together. At this early date a depth of 4 feet at the back and 3 feet at the front is not too much, but if stable manure only is used this ought to have been well prepared, by being thrown into a heap to ferment, sweeten, and moderate in strength, two or three turnings in the course of about a fortnight being given. A bed made solely of this material should not be more than 3 feet deep.

After the frame is placed in position half fill with some of the shortest of the heating material, on this placing 5 inches or rather more of fine sandy soil, and then cover with glazed lights. When the trial sticks show that no risks of overheating will be run the seed should be sown. Open shallow drills, with the aid of the edge of a square measuring rod, 4 inches asunder. In every second drill sow the Carrot seed, in the rest Radish seed, and either level over or cover with a little added soil. Should the soil be somewhat dry moisten the drills prior to sowing, otherwise no watering will be needed for some time to come. Protect frames with mats and litter. Radishes may also be sown in drills or broadcast over the borders of houses intended for Tomatoes later on, being a fairly profitable "snap crop." French Forcing is the quickest growing Carrot, Nantes Horn forming a good succession; while of Radishes the first ready for use are Early Scarlet and White Forcing Turnip, Wood's Frame and French Breakfast also being quick growing and good. In each case sow seed thinly, or much thinning out will be absolutely necessary.

Pot Culture of Potatoes.—Extra early, if not very heavy crops of Potatoes can be had from 9-inch or somewhat larger pots, set on shelves at the back and on the beds and front stages of vineries and Peach houses being forced. The earliest short-topped varieties are to be preferred for this method of culture, and if the favourites Mona's Pride and Old Ashleaf are not available, such varieties as Sharpe's Victor, Early Border, and Early Laxton may be substituted. Fairly strong sets, each furnished with the first strong sprouts only, are desirable, these having been previously started in moist heat. Old Chrysanthemum soil, or failing this a mixture of two parts of light loam to one part of old Mushroom-bed manure with a very little soot added, answers well. Drain the pots roughly, and plant a single set in each rather deeply, good room being allowed for a top-dressing to be given when the shoots have extended above the level of the rim of each pot. Water carefully at first, only enough being given to keep the soil just moist, and when the pots are becoming well filled with roots do not let the soil become dry. Fairly deep boxes and large pots may also be utilised for a similar purpose, the sets being disposed 6 inches apart each way.

PLANT HOUSES.

Loam.—If a large stock has not been wheeled under cover, no time should be lost in doing so, to have it in good condition for use when

required. As opportunity offers it should be pulled to pieces and the worms removed. As this work proceeds it is a wise plan to select the most fibrous portions, and store it for choice plants that need a compost of this nature. This is readily accomplished by the aid of an inch sieve. That which passes through should be again placed in a finer sieve, and the particles that pass through reserved for seeds, seedlings, cuttings, and small plants where a rough compost would prove unsuitable and out of place. It is surprising when a large amount of loam is prepared for use in this manner how quickly the work of potting, filling pans and boxes for seeds and cuttings can be carried on. It is a mistake to leave work of this nature until the busy season of the year.

Leaf Mould.—The amount required for use during the spring months should also be under cover, ready for preparation during unfavourable weather. This undergoes a similar process to the loam, differing only in being passed through a sieve with a half-inch mesh. A heap of rough material may also be prepared by breaking it up with a fork, removing the finest particles by the aid of a sieve, sticks also being carefully picked out. This rough heap, when cleaned, will be found useful for placing over the drainage of many plants, and incorporating with composts that are required as rough as possible. Our leaf mould is never stacked or used for potting purposes when too much decomposed. We prefer it when the fibre of the leaves is still perfectly fresh, which will be the case if the leaves have not laid more than 1 foot in depth, and are fully exposed.

Manure.—Where much potting has to be done at various times of the year it is necessary to wheel into a shed good heaps of manure in autumn and at the present time. The autumn supply consists of cow manure, from which the straw was shaken out, and horse droppings. The former, if moderately dry when stored, will rub easily through a half-inch sieve. It is useless to sift it if not dry enough, for if laid thickly together the labour of sifting would be wasted. If not sufficiently dry place it in boxes or flat hampers for a few days in the boiler house or other position to dry. Be careful that it is not baked, for this evil is as bad as sifting it when too wet. The horse droppings should be in good condition for passing through a sieve. The preparation of manure for potting is important; it cannot well be too finely divided for incorporating with other adhesive ingredients. If it is wet and adhesive it renders a compost with which it may be mixed unsuitable for use. Cow manure may be stored twelve months previous to being used when perfectly fresh. Our plan is to place it in an old shed and surround it with dry loam to soak up all the liquid that runs from it. This loam is equal to manure for many plants afterwards. As it is removed from the manure heap it is mixed with equal quantities of dry loam and a fresh supply placed round the heap of manure. No waste takes place by this method, and the loam that has been soaked with manure will be found invaluable for Richardias, Chrysanthemums, and plants of a similar nature.

Chemical Manures.—The stock required for the year's supply should be ordered, so that it will be ready for use when required. Amongst these may be included half and quarter-inch bones with the fine left in, as well as a supply of meal. A box or barrel of soot should also be placed handy for use, and a few barrowfuls of wood ashes. Very few plants dislike the two latter, and either may be beneficially used in the majority of composts where loam, leaf mould, and manure are mainly employed.

Sand and Charcoal.—If the supply of the former is not equal to what will be required no time should be lost in getting in the necessary quantity. For mixing with composts it is much better dry than wet, especially early in the season when other ingredients have a tendency to be moist. Charcoal should be sorted and broken into suitable sizes.

Peat.—Sort this into three classes, that with the most fibre being reserved for Orchids, the hardest for Azaleas, Heaths, and other hard-wooded plants, while the lightest will do for Ferns. For the two latter it should simply be broken up with the hand, and Fern roots, pieces of wood, and strong roots of Heaths removed; while that required for Orchids should have all the particles of soil shook out of it, which will be useful for many small Ferns, Mosses, and other plants.

Pots and Crocks.—The former should all be washed ready for use where they are not cleaned as they are emptied and stored away in their sizes. The crocks must be thoroughly washed; this is as important as using clean pots. The drainage of many plants is rendered untimely defective by the use of dirty crocks. When washed and dry sort and break them into various sizes ready for use, and place them separately. This is quickly done by the aid of sieves, except the largest or two largest sizes, and this can be selected during the process of breaking, and should be placed on one side first.

Labels and Stakes.—The first we have long since discontinued making, for they can now be purchased so cheaply. The necessary quantity should be ordered ready for use, and relabelling can be done as far as possible. It is a mistake to leave it until the different plants require potting, as is too frequently the case. Repoint stakes and tie them in sizes, it can then be seen what sizes and the quantity that will be needed. These, if bought, should be placed in early so that they can be pointed. Small stakes for a variety of purposes are generally in demand, and for this purpose large Bamboos are bought, cut into lengths, and split; the sharp edges are merely taken off with a knife, and the stakes pointed off at one end.

Boxes.—Some will decay, and to keep a good stock in condition for use a few should be made annually. We use common floor boards

6 inches wide. The ends and sides only want sawing into lengths. The bottoms are soon nailed on if the width is such that two or three boards without sawing will cover it. For three boards placed lengthways the boxes should be 19 inches wide, which will allow two half-inch spaces for drainage. If shallow boxes only are needed the boards may be sawed straight down the centre. Boxes last half as long again when thoroughly painted inside and out before they are used.



APIARIAN NOTES.

BREEDING.

OWING to the mildness of the season, the mean temperature for several weeks being about 40°, bees are daily on the wing, searching everywhere for pollen for breeding purposes, which many hives are now doing, ocular demonstration proving breeding commenced when the temperature was at 9° early in December. I have observed occasionally bees began to breed at a zero temperature about Christmas, which negatives the assertions that bees hibernate, or that to get bees to breed they must be fed.

With one exception they began to increase about three weeks earlier than is usually the case. Whether this will be an advantage or not is as yet uncertain, but it is worth watching. One thing is certain. The early spring of 1893 encouraged the bees to increase their numbers quickly; early swarming resulted, and the long continuance of fine weather induced repeated swarming. I confess past experience has taught me that excessive early breeding demands a deposition of queens at an early date at the beginning of the summer if profitable hives are expected.

CAN EARLY BREEDING BE ARRESTED?

This question may in some instances be answered in the affirmative, but would do more harm than good. A complete stripping of the hive's outer covering would lessen, if it did not stop it altogether, but otherwise the hive would be a great deal the worse. Hives that do not carry away the moisture sufficiently, being damp and unhealthy, are unfavourable to early breeding, it being most prevalent in comfortable hives. Early breeding has its advantages. I am in receipt of a letter from a correspondent in the south of England in which the writer refers to several hives that were unprofitable because they did not come up to full strength early enough to catch the flow of honey. An important item for the southerner, however, is because of the superior quality of his honey. Thanks to his mode of management, his next summer's produce is all bespoke, and this by gentlemen who previous to 1893 had their supply from Scotland, where up till that date they did not find the southern honey to their taste. It is in the south of England and other favourable localities that early breeding is desirable, and every encouragement should be given to the bees, so that they would be in full strength by the beginning of April. Even so far north as we are, hives to get the advantage of the first flow of honey from fruit blossoms should be on the eve of swarming by the first day of April. In both cases young fertilised queens should be in readiness to take the place of old ones by the month of May, and later ones for next year by the end of June.

The health of our hives is good; not a single speck of excremental matter has been seen since the first break of the frost early in November, and that was from young bees, and in two or three hives only. We may have severe weather yet, but every hive is in a fit condition to stand from eight to twelve weeks' confinement without being injured. It is therefore my hope that others are similarly situated, and that 1894 will be a favourable year for bees.—A LANARKSHIRE BEE-KEEPER.

A WELSH BEE FARM.

SOME months ago I called upon Mr. E. J. Gibbins at Gilfach, about two miles from the busy town of Neath, with the intention of seeing his collection of Roses, for I was under the impression that this was the pet hobby of our genial friend. Roses there were, Carnations there were, and a host of annuals, biennials, and perennials too; but instead of waxing eloquent upon any of these, what we hear is, "Come and see my bees." And being assured that the creatures are "perfectly harmless," we follow, and in a few minutes are convinced that Mr. Gibbins is a bee fancier first, and a gardener after.

Most of the hives are arranged in a wooden shed or house about 50 feet by 8 feet, whereby warmth and dryness are promoted and maintained, which would be impossible if kept in the open. To this treatment Mr. Gibbins attributes the fact that he was able to send away

about fifty swarms this season before swarming generally had commenced. Much care has been taken to secure the pure native English bee. Carniolans were tried some years ago, but these were found to do less work, and were consequently discarded in favour of the native, of which there generally from 100 to 150 hives.

Another shed nearly adjoining the "bee house" is used as a workshop, where hives are made during the winter, and where honey is stored and bottled, and adjoining again is a commodious and comfortable "bothy," the walls of which are decorated with "prize cards" and certificates taken at shows for honey. Book-shelves are filled with "bee literature" comprising all the latest English and American works, and here too the queen bees are packed for sending away by post, for because of the uncertainty of the honey crop Mr. Gibbins makes it a point of selling his surplus swarms and queens each year, and looking through his books we find that these are sent to all parts of the kingdom, Ireland and Scotland taking a good share.

It strikes the uninitiated as strange that bees should be sold by weight, yet such is the case, and here we note one instance of $\frac{1}{2}$ cwt. going to one place. To our question as to whether any disease had to be contended with, the reply is, "So far, no disease has made its appearance;" and this is not to be wondered at either, considering that within and around the apiary everything is kept scrupulously clean and sweet. Mr. Gibbins was evidently given to figures, and told us that he considered that he had about 42,000,000 bees, which would weigh over $\frac{1}{2}$ ton; we cannot now remember of any amateur who has a larger apiary; but, large as this is, Mr. Gibbins still means to extend it. He has presented some neighbouring farmers with Dutch Clover seeds gratis, to provide forage; this, with the Blackberry and Charlock, being the chief source of honey in the district, with Heather sometimes in the autumn. We are told that before bottling, the honey is kept for some days in large clean earthenware jars, to allow any pieces of wax to settle, and the quality is so uniformly good that the best prices are always, without difficulty realised. "Of course," we remark, "you must realise a good profit from your hobby." But the rejoinder was a hearty laugh—"Have you ever yet discovered a hobby that did pay in £ s. d.?" On the outside of the bee houses Apple trees and Gloire de Dijon Roses are trained, and surrounding them are banks of Roses and other flowers with large bushes of wild Gorse in the background.—BRADWEN.

GARDENERS' CHARITABLE AND PROVIDENT INSTITUTIONS.

THE GARDENERS' ROYAL BENEVOLENT INSTITUTION.—*Secretary*, Mr. G. J. Ingram, 50, Parliament Street, London, W.C.

UNITED HORTICULTURAL BENEFIT AND PROVIDENT SOCIETY.—*Secretary*, Mr. W. Collins, 9, Martindale Road, Balham, London, S.W.

ROYAL GARDENERS' ORPHAN FUND.—*Secretary*, Mr. A. F. Barron, Royal Horticultural Society's Gardens, Chiswick, London, W



••All correspondence should be directed either to "THE EDITOR" or to "THE PUBLISHER." Letters addressed to Dr. Hogg or members of the staff often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post, and we do not undertake to return rejected communications.

The "Best" Articles (C. J. F.).—It is entirely contrary to our rules to do what you ask, as it would amount to a public disparagement of many articles that answer their purpose well. We do not know of any article that all persons regard as the best, and all others inferior.

Primula Blooms (John Laing).—The blooms were no doubt very good when gathered, judging by two or three which arrived comparatively fresh, but the dry paper in which they were sent had extracted the moisture from most of them, causing them to shrivel and curl.

Manure for Tomatoes (Reader).—If the soil be very fibrous it would not be advisable to mix any manure with it. The following is a good chemical manure for Tomatoes:—Four parts bone superphosphate, three parts sulphate of potash, and one part nitrate of

soda powdered; mix, keep dry, and apply at the rate of 3 or 4 ozs. per square yard at intervals of a fortnight or three weeks, sprinkling on the surface and washing in.

Grape Vines in an Inside Border (G. B.).—Gros Colman succeeded well with us with the roots entirely confined to an inside border, and only a few of the berries cracked occasionally, generally when the weather was moist in late summer, and hot and dry previously. This we attributed to insufficient water at the roots and moisture in the atmosphere during the swelling period. The house must be properly heated and the Vines started in March for ripening Gros Colman properly. White Gros Colman succeeds grown under the same conditions, but does not require so much heat nor so long a season to perfect the fruit in as Gros Colman. We have not seen this grown profitably. Gros Colman is the best late black Grape for market. Muscat of Alexandria will succeed in a house with Gros Colman, especially with the Vines in an inside border only. When well grown and finished this Muscat is the most profitable white Grape, and the best of all in quality.

Varnishing Orchid Tubs (J. L.).—Although teak is very liable to mildew, like most other wood when in a confined atmosphere, it is not advisable to varnish it, as the Orchid roots run over and cling to it much better bare than when varnished. Of course, if your intention is only to paint the outside of the tubs for the sake of appearance, it will not do any harm; but it should be done when the wood is thoroughly dry and before the tubs are used for the plants. The vapour given off by varnish, also the "flatting" used by painters for drying quickly, is very injurious to plants, as it is absorbed along with atmospheric air, and they show signs of distress in a short time. Vines will flag under its influence, but they take no harm provided air is freely admitted. Perhaps no injury would result to the Orchids if this precaution be taken. Admit air abundantly until the volatile matter has passed off and the varnish has thoroughly dried. We do not think it would be wise, however, to risk it at this time of year, nor at any other without free ventilation.

Cleome heptaphylla (Amateur).—Comparatively few plants of the Capparid family are cultivated in British gardens. Even the typical caper-yielding Capparid spinosa is a stranger except in botanical collections of economic plants. This points to the fact that there are not many possessing marked floral attractions. Of the numerous species long known in cultivation there are a few well worth a little attention. Cleome is a large genus, and includes plants of very diverse habit and character, both annuals and perennials, from tropical and temperate regions. Cleome heptaphylla is of moderate height, with seven-lobed leaves and white flowers, the long purplish stamens of which contrast with the spreading white petals. The flowers are produced freely, and when well grown the plant possesses a light graceful appearance. It can be treated similarly to many other annuals from warm climates—namely, the seeds are sown in heat, and the young plants grown in light soil in the stove, or placed during the summer in the conservatory. It flowers late in summer and autumn, and lasts some weeks in good condition with ordinary care.

Violets in Frames (H. B.).—The method of culture in preparing Violets for flowering in frames in the winter is practically the same as that adopted in growing Strawberries, only rooted runners of the former can be had in April, while the latter cannot be layered before June. In soil prepared as if for Strawberries, and in an open position, plant rooted runners or offsets of Violets during showery weather in April. Compact growers, such as Devoniensis, a very useful single, and Marie Louise, a valuable double variety, may be inserted a foot apart in rows 18 inches asunder; but such strong growers and fine varieties as Victoria Regina and Prince Consort need more space, and the plants should be 18 inches apart, in rows 2 feet asunder. Those named are excellent varieties, and if Argentæflora is added you may have abundance of flowers in different colours from September onwards throughout the winter, providing you can maintain a night temperature in the frames of 40° to 45°, not otherwise, as Violets must have a certain amount of heat for insuring a continuous supply of flowers. Violets can be had in winter by taking stout runners and dibbing them an inch or two apart in boxes of good soil—loam and leaf mould—as if inserting cuttings, keeping them constantly moist, and placing the boxes in a light position in a warm greenhouse.

Propagating Indiarubber Plants (F. B. C.).—The following methods, successfully practised by an old grower, will answer with you if carefully carried out:—The present time is suitable for propagating this plant, either by shoots taken off with a heel or by eyes. When it is propagated by eyes they should be taken with a leaf attached to each, and be placed in silver sand to keep them from bleeding. Insert them in small pots well drained, in a mixture of peat and cocoa-nut fibre, and plunge in a strong bottom heat of 90°, with a little sand under each cutting. If they are not placed in a strong bottom heat the eyes will not break. When the eyes have rooted and commenced growing they should be repotted into 48-sized pots, in equal parts of turfy loam and peat, with sufficient sand to keep the soil open. The plants should be placed in a temperature of about 70°, and be syringed frequently; occasionally sponging the foliage is also highly beneficial. The plants should not be allowed to become root-bound until they have grown to the allotted size, when they will be greatly benefited by liberal supplies of liquid manure. During their growing season they should never be allowed to become dry at the roots, as dryness causes the leaves to turn

yellow, and spoils the beauty of the plants. Shoots taken off with a heel will make plants much quicker than raising them from eyes; and it is the safest plan, for if strong bottom heat is not afforded, the eyes, as before mentioned, will not break into growth. When only a few plants of rapid growth are required we advise that they be raised from cuttings, but when a great number of small plants is required the mode of raising them from eyes must be adopted.

Culture of *Ramondia pyrenaica* (F. B.).—The plant you name inhabits a somewhat varied area in the Pyrenean and Piedmontese Alps, oft-times on the steep and almost perpendicular faces of the rocks. When so situated, however, it is generally where moisture is in abundance, as it is impatient of drought, preferring protection from hot sun. This, however, is of not so great moment as a plentiful supply of moisture in a well-drained position. Plant it in equal parts of peat and loam, together with a liberal addition of silver sand or grit—it delights to send its tiny fibres into moist sand—and success will invariably attend the operation. From its extremely prostrate habit of growth it is not to be recommended as a border plant, since heavy rains keep the plant almost wholly covered with earth, but on a mound above the ordinary level it may be made as equally at home as in its native habitat. It is chiefly increased from seed, though now and then some few plants throw out offsets; but to detach these with roots is a very dangerous operation, and should always be avoided. Sow the seed as soon as ripe. This will be about the middle of August, and the seedlings will appear the following spring. Do not be discouraged by the slow growth of seedlings, which is remarkable. When the seedlings are of sufficient size they may either be potted or pricked out in small colonies on the rockery.

Lapageria Unhealthy (H. A. B.).—There are two main reasons why these plants are often in an unsatisfactory state in pots:—1, Close, soil not sufficiently drained, and hence sour. 2, Pots so densely crowded with roots that the plants do not receive adequate support. Lapagerias usually grow best planted out in a bed at least 18 inches deep, the bottom 6 inches being of drainage, broken clinkers and charcoal being excellent, the remainder springy turfy peat and loam, twice the quantity of the former, with a liberal admixture of charcoal, the whole to be pressed down as firmly as the turfy nature of the compost permits. A bed thus prepared can scarcely be made sour, due provision being made for the free exit of water from the drainage, and when the soil is permeated with roots it is not easy to give too much water; until then water must be given more sparingly, yet the soil should never get anything like dry. If you prefer growing the plant in a pot, prepare the soil similarly. In the event of your plant not having rooted freely, it will be advisable to remove a good part of the old soil, which will be sour, and give fresh as suggested, thinning out and shortening wiry growths to the best buds you can find, syringing the plant twice or thrice a day according to the weather, to prevent excessive evaporation from the leaves, and so assist the emission of fresh healthy roots, which alone can invigorate the plants. We know of Lapagerias that grow luxuriantly and flower profusely on the north side of greenhouses.

Fungus on Orange Trees (*Inquirer*).—No doubt the fungus to which you allude is *Capnodium Citri*, which infests Oranges, Lemons, and allied plants. The following account of the genus *Capnodium* was given by the late Rev. M. J. Berkeley in the "Treasury of Botany"—"A curious genus of fungi established by Dr. Montague to receive a portion of the black smutty parasites which infest the leaves and twigs of shrubs in damp warm climates. It belongs to the division Ascomycetes, and is characterised by the abundant creeping black threads which run over the several parts of the plants which it attacks. Shoots from these threads either invest the fruit or are combined to form it. The fruit consists of irregular often elongated and branched cysts, which in the same species contain naked spores, and sporidia enclosed in asci. Two species belong to the British flora: *C. Footii*, found on Laurel leaves; and *C. elongatum*, in the extreme south-west, on Pear trees. Others are the plague of Coffee, Lemons, Olives, and other important plants. In a young state these plants are not distinguishable from *Antennaria*. The stomates of the plants they attack are completely smothered, and direct light almost excluded, so that the functions of the leaves are greatly impeded. No remedy is known when the parasite is once developed. If any is applied it must be directed to the destruction of the different species of coccus on whose excretions these fungi seem mostly to be developed. Lemons frequently arrive in this country in an unsaleable condition, incrustated more or less completely with a jet black felt in consequence of the growth either of an *Antennaria* or the spawn of *Capnodium Citri*, which seems to increase greatly after the fruit is packed up for the markets." It may be prevented by the application of a fungicide, which we suspect you know how to prepare and apply.

Names of Plants.—We only undertake to name species of plants, not varieties that have originated from seed and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in firm boxes. Slightly damp moss, soft green grass or leaves form the best packing, dry wool the worst. Not more than six specimens can be named at once, and the numbers should be visible without untying the ligatures, it being often difficult to separate them when the paper is damp. (*Amateur*).—*Dieffenbachia pieta*. (*H. B. D.*)—The Zonal Pelargoniums are florists' flowers, which we do not undertake to name. (*Yorks*)—1, *Cypripedium barbatum*; 2, *Oncidium curtum*. (*Suburban*).—*Lælia anceps*.

TRADE CATALOGUES RECEIVED.

Brockhampton Nursery Seed and Floral Depot, Havant, Hants.—*Garden Seeds*.

William Bull, King's Road, Chelsea.—*Catalogue of Seeds*.

George Bunyard & Co., Maidstone, Kent.—*Home-grown and Genuine Seeds*.

Cooper, Taber & Co., 90, Southwark Street, London, S.E.—*Wholesale Catalogue of Seeds*.

W. Cutbush & Son, Highgate Nurseries, London, N.—*Flower, Vegetable, and Farm Seeds*.

M. Cuthbertson, Rothesay, N.B.—*Seeds and Plants*.

E. P. Dixon & Sons, Hull.—*Seed Catalogue*.

Hogg & Robertson, 22, Mary Street, Dublin.—*Seed List*.

Kelway & Son, Langport, Somerset.—*Manual of Horticulture and Agriculture*.

Charles Lorenz, Erfurt, Germany.—*Flower and Vegetable Seeds*.

Thomas Methven & Sons, Princess Street, Edinburgh.—*Garden Seeds and Implements*.

W. Paul & Son, Waltham Cross, Herts.—*Seeds and Garden Sundries*.

John Peed & Sons, Roupell Park Nurseries, Norwood Road, S.E.—*Vegetable and Flower Seeds and Garden Sundries*.

Charles Sharpe & Co., Sleaford, Lincolnshire.—*Garden and Farm Seeds*.

H. & F. Sharpe, Wisbech, Cambridgeshire.—*Garden and Agricultural Seeds*.

Robert Sydenham, Tenby Street, Birmingham.—*Vegetable and Flower Seeds*.

Taylor & Thomson, Duke Street, Bishopsgate, London.—*Seeds and Horticultural Sundries*.

Robert Veitch & Son, 54, High Street, Exeter.—*Kitchen Garden and Flower Seeds*.

COVENT GARDEN MARKET.—JANUARY 3RD.

FRUIT.

THERE has been the usual cessation from briskness in trade that occurs after Christmas.

			s.	d.	s.	d.				d.	s.	d.			
Apples, per bushel	2	6	to	9	0	Peaches, per doz.	..	..	0	0	to	0	0
Cobs	40	0	42	6	Plums, per half sieve	..	..	0	0	0	0	
Grapes per lb.	0	6	2	0	St. Michael Pines, each	..	..	2	0	6	0	
Lemons, case	10	0	15	0								

VEGETABLES.

	s.	d.	s.	d.		s.	d.	s.	d.		
Beans, Kidney, per lb.	0	3	to	0	4	Mustard and Cress, punnet	0	2	to	0	0
Beet, Red, dozen	1	0		0	0	Onions, bunch	0	3		0	0
Carrots, bunch	0	4		0	6	Parsley, dozen bunches	2	0		3	0
Cauliflowers, dozen	2	0		3	0	Parsnips, dozen	1	0		0	6
Celery, bundle	1	0		1	3	Potatoes, per cwt.	2	0		4	"
Coleworts, dozen bunches	2	0		4	0	Salsify, bundle	1	0		1	5
Cucumbers, dozen	3	0		7	0	Scorzonera, bundle	1	6		0	"
Endive, dozen	1	3		1	6	Shallots, per lb.	0	3		0	0
Herbs, bunch	0	3		0	0	Spinach, bushel	8	0		0	0
Leeks, bunch	0	2		0	0	Tomatoes, per lb.	0	3		0	7
Lettuce, dozen	0	9		1	0	Turnips, bunch	0	4		0	6
Mushrooms, punnet	0	9		1	0						

AVERAGE WHOLESALE PRICES.—CUT FLOWERS.

Orchid Blooms in variety.

	s.	d.		s.	d.		s.	d.		s.	d.
Arum Lilies, 12 blooms ..	4	0	to	6	0	Narciss, White (French),					
Azalea, dozen sprays.. ..	0	9		1	0	dozen bunches.. ..	2	0	to	4	0
Bouvardias, bunch	0	6		1	0	Orchids, per dozen blooms	3	0		12	0
Camellias, dozen blooms ..	1	0		3	0	Pelargoniums, 12 bunches	6	0		12	0
Carnations, 12 blooms ..	1	6		3	0	Pelargoniums, scarlet, doz.					
Chrysanthemums, dozen						bunches	4	0		6	0
bunches	2	0		6	0	Poinsettia, doz. blooms ..	4	0		8	0
Chrysanthemums, dozen						Primula (double), dozen					
blooms	0	6		2	0	sprays	0	6		1	0
Eucharis, dozen	4	0		6	0	Pyrethrum, dozen bunches	2	0		4	0
Gardenias, per dozen ..	4	0		6	0	Roses (indoor), dozen ..	0	6		1	6
Hyacinths, dozen spikes ..	3	0		5	0	„ Tea, white, dozen ..	1	0		2	0
Hyacinth, Roman, dozen						„ Yellow, dozen	2	0		4	0
sprays	0	6		0	9	Roses, Safrano (French),					
Lilac (French) per bunch	3	6		6	0	per dozen	1	0		2	0
Lilies of the Valley, dozen						Roses, Safrano (French),					
sprays	0	9		2	0	per 100	4	0		6	0
Lilium longiflorum, per						Tuberose, 12 blooms.. ..	0	4		0	6
dozen	6	0		12	0	Tulips, dozen blooms ..	0	9		2	0
Maidenhair Fern, dozen						Violets, Parme (French),					
bunches	4	0		6	0	per bunch.. ..	3	0		5	0
Marguerites, 12 bunches ..	2	0		4	0	Violets, Czar (French), per					
Mignonette, 12 bunches ..	3	0		6	0	bunch	2	0		3	0
Narciss, Yellow (French),						Violets (English), dozen					
dozen bunches.. ..	2	0		4	0	bunches	1	6		2	0

PLANTS IN POTS.

	s.	d.	s.	d.		s.	d.	s.	d.		
Arbor Vitæ (golden) dozen	6	0	to	12	0	Foliage plants, var., each..	2	0	to	10	0
Aspidistra, per dozen ..	18	0	36	0	Hyacinths, per dozen ..	6	0	9	0		
Aspidistra, specimen plant	5	0	10	6	Hyacinth, Roman, dozen						
Azaleas, per dozen	24	0	42	0	pots	9	0	12	0		
Chrysanthemums, per doz.	4	0	9	0	Lilium Harrissi, per dozen	12	0	24	0		
Dracæna terminalis, per					Lycopodiums, per dozen ..	3	0	4	0		
dozen.. ..	18	0	42	0	Marguerite Daisy, dozen ..	6	0	12	0		
Dracæna viridis, dozen ..	9	0	24	0	Mignonette, per doz.	6	0	9	0		
Ericas, per dozen	9	0	24	0	Myrtles, dozen	6	0	9	0		
Euonymus. var., dozen ..	6	0	18	0	Palms, in var., each	1	0	15	0		
Evergreens, in var., dozen	6	0	24	0	„ (specimens)	21	0	63	0		
Ferns, in variety, dozen ..	4	0	18	0	Poinsettia, per dozen.. ..	12	0	15	0		
Ferns (small) per hundred	4	0	6	0	Solanums, per dozen	9	0	12	0		
Ficus elastica, each	1	0	7	6	Tulips, per dozen	6	0	9	0		



UNPROFITABLE LIVE STOCK.

It was on the eve of the shortest day that we left Euston by the 4.30 P.M. express for the Midlands. The day had been stormy, the wind was still high, and heavy rain came pelting against the carriage windows all the way to Northampton; then came sleet, and beyond Market Harborough snow had followed rain as the wind veered round to the north-east, covering the whole countryside to the depth of 3 or 4 inches. The storm clouds vanished before the stiff nor'easter, and we drove from the station over the snow, which glistened in the bright clear light of the Christmas moon. Most striking and impressive was the weird beauty of the scene, but the wind was bitterly cold, and the sight of a number of cows standing in the snow on the south side of a hedge for shelter was a bit of stern reality which drove away every sentimental thought. What a day and what a night for them! What a lesson was the scene for anyone able to grasp its full meaning—its true significance!

Those cows, we found, were "dry," and were within six or eight weeks of calving. They had ceased to yield any milk, therefore they required no special care. Surely if their owner gave any thought to the matter that was the conclusion he had come to; or probably—most probably—mere custom, old as the hills, had been followed without a thought as to the good or evil of it. There were the cows without shelter and practically without food. The hedge, a noble one of full twenty years growth, had just been reduced from a height of 14 or 15 feet and half as much in width, to 4 or 5 feet, all the stem growth being cut out except what was required for plashing, in view of subsequent trim keeping. Very praiseworthy is neatness, but the wisdom of its application in this instance was very questionable. If that old hedge was the only means of shelter for stock it ought never to have been cut down; but being cut down, the cows ought not to have been left out on pasture so devoid of shelter. Just consider what they required and what they had! For cows so forward in calf extra nourishment, with shelter from cold and wet, are absolute necessities. How can we have healthy cows or sturdy calves without them? Short commons in the way of food would be bad enough, but in combination with such reckless exposure the effect must be most serious. Here had the cows been out in a pouring wet day, driven to clear off the innutritious fog by ravenous hunger; out, too, in the snowstorm with the snow melting upon them as it fell, and then through the long winter night standing in the snow, with only the thin barrier of the newly plashed hedge to break the force of the high wind. The owner of those cows has had abortion in his herd, he will have more of it; the calves that survive the trying ordeal will be weakly, and the cows will come into milking again so much out of condition that the milk will be alike inferior in quality and quantity. Such stock is bound to be unprofitable.

On the following morning we saw another example of unprofitable stock which seemed positively even more reprehensible. This was a herd of calves nine or ten months old that had just been turned out of a hovel into the snow-clad home-close for exercise. Their clamorous outcry for food as they crowded together against the gate of the homestead attracted our attention. Never had we seen animals in more wretched plight; the prominent ribs and staring coat told all too plainly of the state of semi-starvation in which they were kept, and their filthy condition showed that not only had they no dry litter for bedding, but that they had to lie down night after night in an accumula-

tion of filth, so that the whole of their coats except the back were clotted thickly with it. Under such conditions shelter is assuredly of little value. Better be without live stock than so mismanage it, to say nothing of the positive cruelty to the poor animals. How can anyone expect a profit from such stock? If calves subjected to such ill-treatment live to go out on pasture next spring they will require the whole of the summer to bring them round. See what loss of time this involves, as well as loss of means. Does not this throw some light upon the oft-told tale of purchased stock being kept for a year, and then sold for less than they cost?

The want of litter for bedding was doubtless owing to the fact of the whole of the farm being in grass. Often have we called attention to the folly of such an extreme, and insisted upon the value of a few acres of arable land. The great drought of 1893 has perhaps done more to correct this mistake than anything that could be written or said, and we hope that another spring will witness the breaking up of a moderate area of every dairy farm for the production of corn and straw for home use, as well as roots, and such extra green crops as are suitable to each locality.

WORK ON THE HOME FARM.

Early lambing demands extra care, and every precaution must be taken against the trying effects of sudden changes of weather. See that fold or yard shelter is efficient and ample, that the shepherd has everything at hand for his requirements, and that nothing takes him from the flock, which must be under close observation by night and day. If the master or an efficient assistant can take charge for a few hours by day frequently the shepherd should be sent home to get some real rest. This is quite worth while, as it enables him to bear the strain of broken rest better, and to be more on the alert always. A cordial consisting of equal parts of brandy and nitre, with a strong infusion of ergot of rye is useful in cases of protracted labour, and subsequently syringing with carbolic oil, has saved the life of many a valuable ewe.

Watchfulness and care, patience and gentle treatment, are the chief factors to success in this important work. No Turnips before the lambing, no exposure of lambs to cold and wet; the flock all in the folds at night or close by, if the lambing pasture is well sheltered by a belt of trees or a wood. Such an advantage is a great boon as we have found, but we have had quite the reverse in a lambing yard open to a bleak pasture, where a single night of exposure would involve the risk of a heavy loss of lambs. Now will be realised the importance of severe drafting of ewes at all over-aged last season. It is among such animals that losses mount up. Get rid of them in good time say we, and so reduce the losses to a minimum. Let the shepherd have plenty of crushed oats and bran, and let the master's eye guide him in the use of this and other wholesome food. Mark all ewes at once that prove to be bad mothers, or that are unsuitable from any cause for retaining in the flock. In a long frost or heavy snowfall see that the supply of food in trough and racks is full and ample, and that the feeding is done often enough to prevent the ewes from burrowing among the snow for grass, as they will do if they become at all hungry.

METEOROLOGICAL OBSERVATIONS.

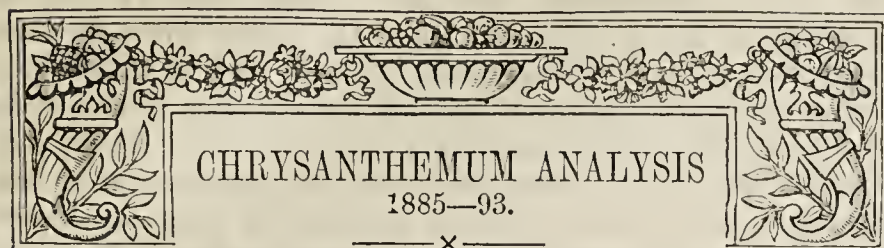
CAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude, 111 feet.

DATE.		9 A.M.					IN THE DAY.				Rain.
1893. December.		Barometer at 32° and Sea Level.	Hygrometer.		Direc- tion of Wind.	Temp. of soil at 1 foot.	Shade Tem- perature.		Radiation Temperature		
			Dry.	Wet.			Max.	Min.	In Sun.	On Grass.	
		Inchs.	deg.	deg.		deg.	deg.	deg.	deg.	Inchs.	
Sunday	.. 24	30.236	43.6	43.0	S.	40.1	48.0	38.0	57.9	31.7	0.049
Monday	.. 25	30.153	40.2	38.7	S.W.	41.0	46.2	39.9	64.7	34.2	0.124
Tuesday	.. 26	30.432	35.8	35.2	N.E.	40.4	46.0	33.1	54.2	27.7	—
Wednesday	27	30.441	40.9	40.6	W.	40.1	45.6	34.6	46.1	30.0	—
Thursday	.. 28	30.601	38.2	38.1	S.W.	39.9	43.1	35.5	43.2	30.3	—
Friday	.. 29	30.705	41.2	40.9	S.W.	40.1	42.1	37.3	44.1	37.0	—
Saturday	.. 30	30.747	29.8	29.3	N.E.	39.6	35.3	26.4	45.2	24.6	—
		30.474	38.5	38.0		40.2	43.8	35.0	50.8	30.8	0.173

REMARKS.

24th.—Dull morning, and cloudy and mild day; slight rain in evening and night.
 25th.—Bright and fine throughout the day; heavy rain from 9 P.M. to 9.30 P.M.
 26th.—Brilliant till 3 P.M. (but misty about 9 A.M.); fair evening.
 27th.—Fog all day; frequently dense till 2.30 P.M., slight after.
 28th.—Thick fog almost throughout; lights necessary much of the day.
 29th.—Smoke fog all morning, rendering lights necessary, but not dense at the ground level; particularly dark from 11.15 to 11.45 A.M., then cleared rapidly and lights put out at noon, and practically no fog after; fine evening and night.
 30th.—Very high barometer in early morning, pressure at 1.50 A.M. being 30.772 inches; bright sunshine till noon; faint sun in afternoon; foggy in evening.
 A very average week, the only noticeable feature being the high barometer.—
 G. J. SYMONS.



THE last November Exhibition of the National Chrysanthemum Society, if we include all sections of the Show, proved with one exception, 1890, the largest the Society has yet held. The display in the incurved section, although small as compared with that at several former shows, was nevertheless larger than in either of the two previous years. The Japanese were splendidly represented. Indeed, if we except the Centenary Exhibition of 1890, the number staged has never before been equalled.

The total number of flowers shown in competition in the incurved and Japanese divisions at each of the nine exhibitions, exclusive of those staged in the classes set apart for six blooms of a variety, was as follows :—

	1885	1886	1887	1888	1889	1890	1891	1892	1893
Incurved	839	1080	964	1147	682	1377	827	609	885
Japanese	835	1026	1221	1759	922	2054	975	1033	1862
	1674	2106	2185	2906	1604	3431	1802	1642	2747

There were not quite as many Japanese Anemones as in 1891, but the Reflexed, Large Anemones, Pompons, Pompon Anemones, and Single were all staged in larger numbers than at any previous exhibition.

The growing period having proved throughout the greater part of it exceptionally warm, a very early flowering season might reasonably have been anticipated, and that consequently the late-flowering Chrysanthemums would have obtained a great advantage over the early ones at the November exhibition. This, however, is found not to have been the case, the early flowering kinds being as a rule rather more largely shown than usual, while the latter sorts were somewhat less frequently staged than in an average season.

During the period covered by our analysis the early and late seasons have been pretty equally balanced, there having been four of the former against five of the latter. In the case of the Japanese other influences are at the present time so much more powerful that this even distribution of early and late seasons is of comparatively little consequence, but the table of Incurved is, of course, benefited by it.

The Empress of India, although never before so poorly represented as at the last Exhibition, nevertheless still continues to retain the position it has held throughout the nine years as the premier flower in the incurved section. Several other leading varieties in the table, including Queen of England, Golden Empress of India, and Miss M. A. Haggas, were also less frequently staged than at any previous show, so that in this respect the Empress did not stand alone. Other choice kinds, such as Lord Alcester, Golden Queen of England, Alfred Salter, and Nil Desperandum were also to be seen in fewer stands than usual; in fact, the only noteworthy exception was Jeanne d'Arc, which, except in 1887, has never before been as well shown.

In some cases this falling away may have been due to the season, but so general was it that some other cause must be sought for if any satisfactory solution is to be obtained, for at none of the preceding eight exhibitions has this occurred to anything like the same extent. When we come to treat of the positions occupied by the varieties of recent introduction it will be seen that it is owing to an unprecedentedly large number of these

being exhibited rather than to any sudden decline in favour of the older kinds that the explanation is to be found.

Looking down the table we come to the first of these new varieties, Madame Darier, at No. 5, which although only sent out in 1890, was shown at the last exhibition in more stands than any other incurved, with the single exception of Jeanne d'Arc. By the way, the name of this new variety is almost invariably incorrectly spelt "Darrier," whereas in the National Chrysanthemum Society's catalogue and also in the raisers' catalogue (so Mr. C. Harman Payne kindly informs me) it appears as I have here given it—Darier.

Then at No. 17 we reach another variety of the same year, Monsieur R. Bahuant, which was staged oftener than Golden Empress of India, Golden Queen of England, or Alfred Salter. Next at No. 24 we find Baron Hirsch, which although only distributed the year before, appeared in as many stands as either Golden Empress of India or Mrs. Heale. Then lower down at No. 31 we come to Ami Hoste (1890), at No. 33 Madame F. Mistral (also 1890), at No. 33 to Mrs. Robinson King (1891), at No. 36 to Brookleigh Gem (1892), and lastly at No. 43 to Lucy Kendall (1892). In fact, taking the total number of flowers staged in this section, about one-sixth were those of varieties sent out during the last three years, *i.e.*, since 1889.

Judging by a table before me giving the performances of the established varieties for the nine years, it is interesting to notice how consistently nearly all the best of them have maintained their positions as exhibition flowers throughout this period. The important exceptions to this rule are but three in number—John Salter, Jardin des Plantes, and Mr. Bunn. John Salter at the last three shows has been staged only about half as frequently as at the preceding six exhibitions. Jardin des Plantes has also fallen away considerably the last three years. The most noteworthy instance, however, is that of Mr. Bunn, its average for the first four years being thirty-five against eight in the remaining five years.

I have again done my best with those go-a-head fellows the Japanese, with the result that the wholesale slaughter of our old favourites still continues, the gaps in the ranks being at once filled by younger competitors for fame. In order to cut short the lingering agonies of a few which would otherwise take refuge low down in the table, I have this time refused admission to any but new varieties which show a record below eight.

Vivian Morel, the sensational flower at the 1892 Exhibition, now heads the list of Japanese. The record for this fine variety is a truly astonishing one. It came out in 1891, and yet in the Exhibition of 1892 was only beaten by Edwin Molyneux, Avalanche, and Sunflower. Then again, with or without taking into consideration the varying extent of the different shows, there is no other instance of any Chrysanthemum whatever being as frequently shown as Vivian Morel was last year. Considering the rapid influx of new sorts it is somewhat consoling to find that there still remains a fair sprinkling of the so-called "established" kinds which continue to maintain their popularity. Three of these are worthy of special mention—Sunflower, Mrs. Falconer Jameson, and Boule d'Or.

Among others which stand their ground almost equally well may be mentioned Edwin Molyneux, Avalanche, Mr. A. H. Neve, and Madame John Laing. On the other hand there are of course very many more which have fallen away more or less seriously in recent years. For instance, at the last two exhibitions the following have been indifferently represented as compared with former years—Etoile de Lyon, Stanstead White, Jeanne Delaux, Sarah Owen, Madame Baco, and Mr. Ralph Brocklebank. Of those which have been losing ground for three or more years may be mentioned Val d'Andorre, Meg Merrilies, Baronne de Prailly, Belle Paule, Carew Underwood, and Comte de Germiny. The most remarkable instance of a leading variety being badly shown last year as compared with its previous records is Monsieur

Bernard, which was scarcely anywhere to be seen throughout the Show.

When we consider that there are already no fewer than twenty-seven varieties on the list which were not even in existence in 1889, and that many of these are improvements on those previously in cultivation, the only wonder is that any of the older kinds should retain their places as well as they do. Vivian Morel, the premier flower, was, as I before stated, sent out in 1891; Florence Davis (No. 6), a very popular variety with the general public, is of the same year; also W. Tricker (No. 7). Next we reach Col. W. B. Smith, the champion new flower of the last Exhibition, which, although it only came out the year before, was nevertheless staged oftener than any other Jap of recent introduction. W. H. Lincoln (No. 9), an 1890 kind, was again well shown. Gloire du Rocher (No. 10) maintains its position fairly well. Mdle. Marie Hoste (1891) has risen since the previous analysis from No. 33 to No. 15. Mr. A. H. Neve (1890) still holds its own at No. 15. Louis Boehmer (1891), however, falls from No. 15 to No. 21; Alberic Lunden (1890), on the other hand, rises from No. 44 to No. 22. G. C. Schwabe (1892) already takes up a place at No. 25, while Charles Davis, of the same year, is only two steps lower down, at No. 27. Mrs. C. Harman Payne (1892), also new to the

analysis, will be found at No. 29; Excelsior and Lord Brooke, also 1892 sorts, at No. 32, W. Seward (1892, but only sent out last spring) at No. 33, John Shrimpton (sent out at the same time) at No. 40, Vice-President Audiguier (1890) also at No. 40, followed by Mr. E. Beckett at No. 41. Lower down we reach Mrs. Alpheus Hardy, Cesare Costa, Lilian B. Bird, R. C. Kingston, Amos Perry, Mr. Charles Blick, J. S. Dibbens, and Miss Dorothy Shea, also all sent out during the last few years. In the next analysis many of the above will, no doubt, greatly improve their positions, while several sterling novelties of still more recent introduction also appear likely to give a good account of themselves.

I here append, as usual, select lists of varieties in the sections other than those devoted to the incurved and Japanese. In each case the different sorts are arranged according to their average records at the last six or less exhibitions, as the case may be. The varieties marked with an asterisk are new to the analysis.

Reflexed.—Cullingfordi, King of Crimson, Cloth of Gold, Pink Christine, White Christine, Golden Christine, Peach Christine, Dr. Sharpe, Chevalier Damage, Mr. M. Sullivan, and R. Smith.*

Large Anemones.—Mrs. Judge Benedict, Lady Margaret, Gluck, Miss Annie Lowe, Delaware,* W. & G. Drover, Gladys Spaulding Empress, Grand Alveole, J. Thorpe, jun., Mdle. Nathalie Brun.*

INCURVED VARIETIES.

Position in Present Analysis.	Average Number of Times Shown.	No. of Times Shown in 1893 in True Relative Proportion to the Average.	Name	Date of Introduction.	Raiser's or Introducer's Name.	Colour.
1	56.3	34	Empress of India	1861	Downie, Laird & Laing	Pure white
2	48.0	35	Queen of England	1847	J. Salter.....	Delicate rose blush
3	46.8	30	Lord Alcester	1882	Freemantle	Pale primrose
4	46.3	20	Golden Empress of India	1877	Loader	Pale yellow
5	43.0	43	Madame Darier.....	1890	Sautel.....	Yellow, shaded purple
6	40.9	48	Jeanne d'Arc.....	1881	Lacroix	Blush white, tipped purple
7	40.0	24	Golden Queen of England	1859	J. Salter	Pale straw colour
8	39.2	40	Princess of Wales.....	1865	Davis	Blush, tinted rose
9	38.8	36	Miss Violet Tomlin	1888	Doughty.....	Bright violet purple
10	37.3	27	Miss M. A. Haggas	1888	Hayes	Soft bright yellow
11	37.2	38	Lord Wolseley	1883	Orchard	Bronzy red
12	33.2	21	Alfred Salter.....	1856	J. Salter	Clear lilac pink
13	32.0	31	Prince Alfred	1863	Davis	Rose carmine, shaded purple
14	30.5	23	Mrs. S. Coleman	1889	Russell	Bright rose, shaded yellow
15	29.5	14	John Doughty	1889	Doughty.....	Bronze fawn, suffused rose
16	27.0	17	Nil Desperandum	1862	Smith	Dark orange red
17	26.0	26	Monsieur R. Bahuant	1890	Hoste	Rose purple
18	23.8	14	John Salter	1866	J. Salter	Cinnamon, orange centre
19	23.1	20	Mrs. Heale.....	1867	Heale	Pure white
20	22.5	14	Lady Hardinge.....	1861	Clark	Silvery rose
21	21.8	11	Barbara	1869	J. Salter	Bright amber, shaded orange
22	21.3	8	Mrs. W. Shipman.....	1878	Shipman.....	Fawn colour
23	20.6	16	Princess of Teck	1868	Pethers	White, suffused pink
24	20.0	20	Baron Hirsch	1892	Owen	Golden buff
25	19.0	2	Jardin des Plantes	1859	J. Salter	Deep golden yellow
26	17.0	16	Hero of Stoke Newington	1873	Forsyth	Rose pink
27	16.0	16	Robert Cannell.....	1889	Cannell	Deep golden buff
28	15.0	19	Alfred Lync	1888	Lyne	Rose lilac
29	13.4	11	Empress Eugénie	1866	Pethers	Rosy lilac
30	13.3	10	Refulgens	1873	Hock	Rich purple maroon
31	13.0	13	Ami Hoste	1890	Sautel.....	Buff yellow, striped carmine
32	12.3	3	Mr. Brunlees	1884	Smith	Indian red, tipped gold
33	12.0	11	Camille B. Flammarion	1889	Sautel.....	Dark violet
33	12.0	12	Madame F. Mistral	1890	Sautel.....	Violet rose, tipped salmon
33	12.0	12	Mrs. Robinson King	1891	Hotham	Rich yellow
33	12.0	12	Princess Beatrice	1868	Wyness	Delicate rosy pink
34	11.2	7	Cherub	1862	Smith	Orange, tinted rose bronze
35	10.8	12	Lady Dorothy	1887	Buss	Cinnamon buff, suffused rose
36	8.0	8	Brookleigh Gem	1892	Cante	Lilac pink
37	7.8	5	Mr. Bunn	1881	Bunn	Bright golden yellow
38	7.0	6	Novelty	1860	Clark	Blush
39	6.5	3	White Venus.....	1872	Shrimpton	Pure white
40	6.3	3	Prince of Wales	1865	Davis	Purple
41	5.9	7	Mrs. Norman Davis.....	1886	Mizen	Rich golden yellow
42	5.3	5	Charles Gibson	1887	Mizen	Bronze red, centre fawn
43	5.0	5	Lucy Kendall	1892	Owen	Coral red

Japanese Anemones.—Jeanne Marty, Monsieur C. Leboqz, Nelson, Monsieur Pankoucke,* Sabilie, Mdlle. Cabrol, Fabian de Mediana, Le Deuil, Sœur Dorothée Souille, and Rodolphe Ragionière.

Pompons.—Mdlle. Elise Dordan, Black Douglas, W. Kennedy,* W. Westlake, Prince of Orange, Mdlle. Marthe, Golden Mdlle. Marthe, Rubrum Perfectum, Pygmalion, President, and Cendrillon.

Pompon Anemones.—Antonius, Madame Montels, Francis Boyce,*

Rose Marguerite, Marie Stuart, Mr. Astie, Astrea, Regulus, Emily Rowbottom,* Perle, Calliope.

Single.—Admiral Sir T. Symonds, Jane, Mary Anderson, Rev. W. E. Remfrey,* Bessie Conway,* Guiding Star,* Lady Churchill, Mrs. D. B. Crane, Purity,* and Yellow Jane.

My thanks are once more due to Mr. C. Harman Payne, who has again been so good as to supply me with the dates and raisers' names of those varieties which are not to be found in the last edition of the National Chrysanthemum Society's catalogue.—E. M., *Berhampsted*

JAPANESE VARIETIES.

Position in Present Analysis.	Average Number of Times Shown.	No. of Times Shown in 1893 in True Relative Proportion to the Average.	Name.	Date of Introduction.	Raiser's or Introducer's Name	Colour
1	79.0	79	Viviand Morel	1891	Lacroix	Rose, striped white
2	57.5	45	Edwin Molyneux	1886	Cannell	Chestnut crimson, golden reverse
3	57.3	41	Avalanche	1887	Cannell	Snow white
4	52.8	52	Sunflower	1888	Cannell	Rich golden yellow
5	49.3	35	Etoile de Lyon	1888	Boucharlat	Rosy purple
6	47.0	47	Florence Davis	1891	Davis	Pure white, greenish white centre
7	44.0	44	William Tricker	1891	—	Rich light pink
8	43.0	43	Col. W. B. Smith	1892	Spaulding	Light terra-cotta
9	42.0	40	W. H. Lincoln	1890	Fewkes	Deep yellow
10	39.5	35	Gloire du Rocher	1891	Gibson	Orange amber, flushed crimson
11	36.7	4	Monsieur Bernard	1886	Laing	Rosy purple
12	33.5	20	Stanstead White	1887	Laing	Pure white
13	30.0	17	Val d'Andorre	1883	Pertuzes	Orange red
14	29.0	27	Mrs. Falconer Jameson	1888	Cannell	Orange bronze
15	25.0	25	Mdlle. Marie Hoste	1891	Lacroix	White, slightly tinted pink
15	25.0	22	Mr. A. H. Neve.....	1890	Owen	Silvery blush, purplish centre
15	25.0	15	Puritan	1887	Waterer	White, flushed lilac
16	22.0	18	Boule d'Or	1882	Bernard	Rich yellow, tipped bronze
17	21.3	12	Condor	1888	Boucharlat	White
18	20.8	9	Jeanne Délaux	1882	Délaux	Dark crimson maroon
18	20.8	12	Madame J. Laing.....	1885	Délaux	Creamy white, tinged rose
19	20.5	6	Sarah Owen	1887	Owen	Golden bronze, shaded rose
20	19.7	10	Madame Baco	1886	Davis	Deep rose
21	19.5	11	Louis Boehmer.....	1891	Henderson	Deep purplish rose, lighter reverse.
22	18.0	18	Alberic Lunden	1890	Délaux	Purple crimson
22	18.0	10	W. W. Coles	1888	Craig	Bright terra-cotta
23	16.7	9	Madame C. Audiguier.....	1879	Marrouch	Deep mauve
24	16.5	10	Gloriosum	1885	Waterer	Orange to golden yellow
25	16.0	16	G. C. Schwabe	1892	Owen	Carmine rose
25	16.0	16	Miss A. Hartshorn	1889	Waterer	White, slightly tinted pink
26	15.8	4	Mr. Ralph Brocklebank	1886	Winkworth	Yellow
27	15.0	15	Charles Davis	1892	N. Davis	Canary yellow, tinted rosy bronze
28	14.3	10	Mdlle. Lacroix	1880	Lacroix	White
28	14.3	9	Stanstead Surprise	1888	Laing	Reddish purple
29	14.0	14	Mrs. C. Harman Payne	1892	E. Calvat	Bright rose and white
30	12.5	3	Meg Merrilies	1871	J. Salter.....	Sulphur white
30	12.5	7	Mrs. C. H. Wheeler.....	1885	Waterer	Chestnut crimson, golden reverse.
31	12.3	3	Japonais	1880	Délaux	Bronze yellow
32	12.0	12	Excelsior	1892	Owen	Cerise rose
32	12.0	12	Lord Brooke	1892	Pitcher & Manda	Yellow and bronze
33	11.0	11	Mrs. E. W. Clarke	1888	Craig	Amaranth
33	11.0	11	W. Seward	1892	W. Seward.....	Deep rich crimson
34	10.8	2	Carew Underwood	1886	Beckett	Bronze
35	10.3	12	Comte de Germiny	1881	Veitch.....	Nankeen, striped crimson brown
36	10.0	3	Coronet	1889	Thorpe	Clear yellow
37	9.5	1	Baronne de Prailly	1868	J. Salter.....	Pale rose
38	8.5	3	Belle Paule	1881	Marrouch	White, edged rosy purple
38	8.5	1	Criterion	1873	J. Salter.....	Orange amber
39	8.3	3	Yellow Dragon	1863	Salter	Bright golden yellow
40	8.0	8	John Shrimpton	1892	W. Seward.....	Crimson scarlet, golden reverse
40	8.0	8	Vice-President Audiguier	1890	Lacroix	Rose and white
40	8.0	8	Violet Rose	1889	Harris	Rosy violet
41	7.5	4	Mr. E. Beckett.....	1892	Davis ..	Rich deep yellow
41	7.5	6	Mrs. Alpheus Hardy	1890	From Japan	Creamy white
42	7.0	3	Cesare Costa	1890	Hoste	Deep crimson red
42	7.0	6	Lilian B. Bird	1890	Fewkes	White, tinted pink
42	7.0	4	Monsieur E. A. Carrière.....	1889	Délaux	Creamy white, tinted blush
42	7.0	7	R. C. Kingston	1891	Surman	Rich purple crimson
43	6.0	6	Amos Perry	1892	Ware	Golden yellow
43	6.0	6	Mr. Charles Blick.....	1892	Jones	Golden yellow
44	5.0	5	J. Stanborough Dibbens.....	1891	Dibbens	Dull yellow
44	5.0	5	Miss Dorothy Shea	—	—	Terra-cotta, buff reverse

MANAGEMENT OF TREES.

TREES play such an important part in the economy of Nature, and are so interwoven with the history of men from the earliest times, that the subject is not only vast but illimitable. With thoughts flying back over the silent centuries it is not an easy matter to control one's pen and bring it within the bounds of the object in view—to shut out all other considerations but the very limited yet not unimportant one of our timber trees so treated as to give the best results from two standpoints—firstly, as ornaments which they are often far from being; secondly, their utility as timber, which they do not always attain. Ornaments first, timber after: these two desirable objects appear to me inseparably connected.

There are of necessity other views, notably that of the artist. Here I have in my mind a fine picture of Burnham Beeches in all their rugged grandeur, but on this delicate ground where the artist stands I will not venture to tread; there are distinct types of beauty, which

“Like wit, to judges should be shown,
Both are most valued where they best are known.”

Being but a gardener, I take for my ideal a stately trunk reaching far up, harmonious in its proportions, and constitutionally strong to brave the elements, and must admit, though loth to do so, I cannot avoid comparing my ideal as so many cubic feet of timber with the tree in the picture as so many tons of firewood. But I think these ideals of mine do obtain the respect and admiration of all, and they should receive in their early days the attention they deserve and require at our hands. That they do not always do so is only too evident in many otherwise well-kept demesnes, in which the gardens may be perfect, the mansion stately, but those tall, ancestral trees—where are they? As a rule, walled-in demesnes are generally girdled by a belt of trees, and this is the first point of observation with us gardeners in our peregrinations. How often is a beautiful picture marred by the neglect observable in this timber frame! No matter what good taste is displayed in the grounds, or skill in the gardens, this is the one thing wanting. In a large demesne this may oftener obtain than in one of less acreage; it is a sort of no man's land. A forester may be doing his duty on the estate, but comes not here. It is nothing to do with our friend the gardener, and the farm steward has many and various duties in which tree-pruning does not find a place. Contrast these attenuated forms, debilitated by bad company in the form of the ubiquitous Ivy, with those in some place where each tree is considered and thought for as it should be, I think you will allow there is room for a little to be said on the matter, and that this is a seasonable time to say it.

It was my privilege to learn some useful lessons in this department from a noble employer who loved his trees and had made them a life study. In doing this he but carried on the good work done for many years previous by his father, and very evident was the result in the thousands of tall and stately specimens in the demesne. He now lies beneath their shade, but many a walk and a talk come back in memory, and some pithy anecdote recounted, relevant to the subject so dear to him. With one I venture to point a moral and adorn a tale. I may add that those mentioned have long since passed away. In discussing some point of thinning my noble master asked me if I had heard of the Duke of Bedford and his forester's reputation. Not having done so, he told me a certain Duke of Bedford in conference with his forester, was anxious to have a plantation thinned, to which the latter made strong objections. Asked his reason, he said, “Well, your Grace, it would injure my reputation.” In consideration of which, the Duke, while carrying out his plans, had a notice board prominently placed, saying it was done by himself against the wishes of his forester. The effects of thinning gave, for the time, evidence in favour of the forester's opinion; but the Duke was a far-seeing man, and waited (“all things come to those who wait”) till time had repaired the ravages, then improvement was so apparent, and the notice board so prominent, that at last that forester asked His Grace to have it removed. “For what reason?” says the Duke. “Oh, your Grace,” it injures my reputation.”

Foreigners in the form of choice Coniferæ generally get all the attention they require, perhaps more than some of them deserve, while our native trees are passed over; in the former on the first sign of a double leader it is promptly removed. This same double leader is the rock on which many a fine timber tree is wrecked. They may go on unscathed by storms for a long time, but the more certain is the work of destruction when some “dark showery south-west gale” vents its fury on them, splitting them down, leaving an unsightly wreck, which has to be removed. This is a case of where “that stitch in time” would have saved many a noble tree. In the case of Coniferæ, which I neither despise nor wish to disparage,

a pruning chisel, with a handle of as many feet as you like to have it, is convenient and useful for removing superfluous leaders. In one case of a specimen some 50 feet high showing three leaders a friend, expert with the rifle, shot two off for me; though the dead tops hung for some time rather unsightly the object was attained. With choice and comparatively recent introduced Coniferæ much care and thought is bestowed on them and great pleasure derived in watching the results, a pleasure which has its corresponding amount of pain, when the rigours of some exceptional winter kills them outright.

Some years ago I had several varieties of Eucalyptus given me to raise. They had been sent to my employer from Australia by the Baron F. von Müller, with the idea that they might succeed in Ireland. Some of the plants raised were planted on a nobleman's estate in Wexford, where in four or five years they attained the height of 60 feet, but then succumbed to frost. Without detracting from the praiseworthy efforts of those who endeavour to acclimatise the interesting trees from many lands, and add to the beauty and interest of estates and pleasure grounds, I think our native trees, and those long ago introduced, which are as reliable, should with good reason receive as much attention, by judicious and timely thinning—periodical trips with a small hatchet to remove Ivy at the base, removing some of the lower branches, shortening back as a corrective those which have a tendency to develop into heavy limbs, with the idea of attaining a stately trunk with a well balanced head.

These are the trees which must and do give pleasure to all who look on them, whether it is the gardener with an eye to beauty and stateliness, or the timber merchant with an eye to cubic measurement, or the owner with perhaps an eye to both considerations, and these are the trees which stand when storms have swept off many a weaker neighbour whose strength has been diverted into more heads and limbs than they are able to carry. When the hands that planted, the heads that thought for them are, too, laid low, our children may say, “My father planted that tree,” and add, perhaps, “he pruned it, too, or it would not now be here.”—E. K., *Dublin*.

ABOUT DISBUDDING.

It is many years now since Mr. John Keynes first adopted disbudding in Rose exhibiting, and certainly with marked success. Whether anyone else had adopted it I cannot say, but I think it was through that veteran enthusiast that it became general. In those days trusses of Roses were asked for in schedules and often shown. Is a truss of Roses ever shown now? and by a truss I mean all that is growing on a shoot that is going to bloom. Excepting in the case of those Roses that rarely produce more than one bud on a shoot, I should say the original truss untouched is very exceptionally seen. In the struggle for size in a bloom the outsiders of a truss of flowers have had a ruthless touch, and decapitation has been the result.

Some years ago I recollect our genial friend “D., Deal,” narrating in these pages the beauty of some Rose garden belonging to a friend who did not exhibit, but whose Roses left nothing to be desired, and yet no disbudding practices found any favour there. I was struck with this at the time. I had begun the practice, and often it seemed to me that the plant resented the treatment, and said in appearance, “Well, if you serve me so cruelly I do not care to grow on!” Since I have been a grower of Chrysanthemums the same thought has often crossed my mind when, after carefully disbudding, the petted remnant has remained almost stagnant, and certainly not as if it had profited by that nourishment intended for several others, but by the disbudding concentrated on it.

The wise man tells us there is “a time for all things:” this being so, it follows that disbudding, to be useful and successful, must be done at that time. I think my earlier reasoning on this practice was, if it be good, to get all the nourishment conveyed in the shoot to a single bloom on that shoot, then the sooner the infant buds are sacrificed the better for the selected survivor. This, at any rate, I think is an error. The shoot is then abundantly supplied with sap, and I fancy the sore thus made does not set kindly, and the sap oozing out, much that would go into the bloom is lost.

Mr. E. Molyneux, in his valuable book on the Chrysanthemum, in speaking of the knotty point of taking the bud, gives an illustration of the crown and terminal. In both of these the taking is apparently at a much later date than some young ardent enthusiasts would adopt. Whether in the Rose or the Chrysanthemum, it seems to me that within 2 inches of the selected bloom, the young fry surrounding it had better be allowed to show a visible stem, say of half an inch in length, before decapitation takes place. Lower down the stem I do not think our disbudding can be too early, at

some distance from the future bloom, whether in the Rose or Chrysanthemum, and in the latter it does not appear to affect the crown bud nearly to the same degree as the terminal. In the terminal the selected bud is crowded round by juveniles, as if gummed to it. Here, I think, the selected bud very much dislikes early removal of its fellows.

When the buds to be disbudded have made a short growth, say of half an inch, disbudding is an easier process, and the remaining stem seems in a few days to drop off at a joint as it were. Much the same result happens in disbudding the Rose. The point that it seems necessary to inculcate to those commencing the treatment is that it may be performed too early for the most perfect development of the "taken bud."

In Roses, La France amongst H.P.'s always seems to me a more difficult Rose to manage; it is here that in my eye it plainly shows its Tea blood. We may have disbudded, but lower down the stem as in the Teas, only more so, the buds grow into shoots at a wondrous pace, and at the same time the bloom on which we had fixed our hopes seems to stay in its development. My experience leads me to say these buds or shoots cannot be dealt with too early. Am I right in thinking that these shoots are far less frequently seen on standards than on dwarf plants? However much Tea blood La France may have it has none of the "lasting" power that the Tea possesses, and which adds so immensely to their value either in the exhibition tent or in the house as a floral decoration.—Y. B. A. Z.

HARDY FLOWER NOTES.

WITH the dawning of the new year the heart of the lover of hardy flowers begins to beat high with hope. This hope is, however, too often mingled with despair, as, with sad misgivings, we remember the words of Shakespeare:—

"We see the appearing buds—which to prove fruit,
Hope gives not so much warrant as despair
That frost will bite them."

It is, however, profitless to cherish these thoughts of disaster to the budding flowers, and a walk round the garden in the early days of 1894 will help to drive the fears away and brighten us with feelings of hope and pleasure. It is, of course, impossible that the garden should vie at the present time with stove or greenhouse gay with tender exotics, but, after all, the heart of the hardy plantsman is with those flowers which defy our British winters and struggle against all their storms and trials. So we gladly search the borders and rockeries for some of those blossoms which seek in these gloomy days to bring a little brightness to the garden and to give their owners a cheering ray of pleasure.

Appealing to all in their drooping, modest beauty, the Snowdrops are ever welcome. Early are some this year, far anticipating the traditional period of their bloom, and some plants of *Galanthus nivalis* have been in flower since Christmas Day. These were, however, selected last year on account of their early flowering from many thousands in a neighbouring wood, and only stray blossoms of the common Snowdrop will be seen for a week or two to come. Imported bulbs of *G. montanus* have been in flower for some weeks, and *G. coreyensis* still remained in flower until the opening days of the year. *G. caucasicus*, too, and *G. nivalis* Magnet, one of Mr. James Allen's seedlings, have opened their pure blossoms, and an early Snowdrop received with the true *G. nivalis* Redoutei as *G. Elwesi* has been in flower since the middle of December. This is a fine Snowdrop, and I have lifted it and planted it apart from the remainder of the plants of *G. Redoutei*, which, on New Year's Day were only through the ground. *G. Elwesi* is not any earlier than usual, and only a stray flower or two welcomed the beginning of another season. Soen, however, in border, in hedgerow, and on rockeries the snow-white flowers, bedecked with emerald green, will in many kinds nod to the winds of January and delight us with their pure beauty.

Hapless seems the fate of these pure Crocuses which in such drenching rain peered out to seek in vain the smiles of the sun, so essential to their attaining the zenith of their loveliness. Several kinds appeared and seemed to wait patiently for a little sunshine to enable them to transform their cone-like buds into cups all glittering with light. To some the waiting has been all in vain, and they have had no opportunity of displaying themselves in gold apparel, but have remained in what may be termed their work-a-day attire until destroyed by torrents of rain and storms of wind. This work-a-day attire is, however, extremely pleasing and varied in colour. *Crocus Korolkowi* has been one of the unfortunates, having waited for weeks for sun bright enough to induce it to unfold its segments, only to fall a victim to a south-west gale. Very interesting it was with its curiously brown coloured buds all grained and showing at

the tip the bright yellow it would have displayed in more favourable weather. Then *Crocus Fleischeri*, which has its buds of white streaked with a blackish purple, opened on the last day of the year when the sun shone brightly, and displayed its small white flowers with deep orange-scarlet stigmas. *C. ancyrensis*, which, with its bright orange-yellow buds, is gay even in what may be called its chrysalis stage, opened at the same time and made a bit of lively colouring in the border with its small, sharp-petalled orange flowers. *C. biflorus* is far advanced, and I have several varieties of it, some fawn coloured in the bud with blackish feathering, others devoid of marking, and others of a pretty brown, has up to the time of writing not yet opened. *C. Imperati* has been more fortunate than the others having opened fully several times and delighted one with its glowing purple flowers. Very beautiful and very welcome are these at this season, and even in the bud stage the flowers are pleasing. Among a considerable number there will be found much variety, some light fawn coloured on the outside of the outer segments with pretty streaks upon this ground colour, and others quite free from marking. There is a variety of shade of purple among my flowers, and as I am raising others from seed I hope in time to increase the range of colours in my garden. These winter Crocuses are of little value unless in a position where they obtain every ray of sun and are sheltered from furious winds. Several other species are in bud.

With the Persian Cyclamens in flower in the greenhouse it might be thought that we would be satisfied to wait for the opening of the hardy species for a little longer. The ways of the hardy plantsman are, however, peculiar, and, as we look round, many times do we look for the upraising of the flowers of *C. Coum*, which have for long showed their crimson or white blossoms "cowering," as one may best name their attitude, to the ground. The typical *C. Coum* has round leaves without markings, but a zoned variety has been grown for some time, and in this garden are several of this kind, some of them sent me from the neighbourhood of Broussa. Very delightful is a large bush of the white variety of *Erica carnea*, known sometimes as *E. herbacea*. While the flesh-coloured form is hardly showing its colour the white one has been in flower since the end of October or beginning of November, and forms quite an attraction upon the top of a rockery fully exposed to weather of all kinds.

The absence of sun is delaying the opening of the earlier Saxifrages, and so far as can be judged, they will be later here than in several previous years. Even *S. Burseriana* major has not yet opened with me, and *S. sancta* and *S. luteo-purpurea*, which are both bristling with buds, will be a week or two before they expand. It is in a season such as this that we can surely appreciate the great beauty of the Saxifrages in their varied forms, some mounds of vivid green, some patches of charming rosettes margined with dots of white, and others forming little clumps of small and prickly foliage. With the evergreen *Sempervivums* and *Stonecrops* they help to give the garden a furnished appearance, even in the depth of winter. We have also the usual number of precocious flowers of *Primroses* and *Polyanthuses* in various colours, and one large plant of the common yellow *Primrose* which I have retained in a choice position on account of its extraordinary proliferousness has many fully opened flowers. The *Anemones* are represented by flowers of *A. coronaria*, while *A. blanda* and *A. fulgens* still remain in bud.

Very useful for winter gardening in localities where they stand the climate are the evergreen *Veronicas* from New Zealand. The somewhat tender *V. speciosa* is hardy with me, due doubtless to the influence of the sea, and one plant had two spikes of purple flowers in bloom as the old year passed away. This plant is growing on the top of a rockery facing due south, and protected by a wall from the north and north-west winds. The curious looking little *V. salicornoides* is bright and attractive on the same rockery, while other New Zealand *Veronicas* in various parts of the garden give interest and welcome greenery. These plants are far too little known, and their extended cultivation is much to be desired. It would be well to have them fully tested in our colder districts, and anyone in such a climate would deserve our gratitude by testing the hardiness of several species. A considerable number are perfectly hardy at Edinburgh, and Mr. Lindsay, the Curator of the Botanic Gardens there, is recognised as an authority upon the various species.

Modest, yet bright and attractive, are the little flowers of the Winter Aconite, *Eranthis hyemalis*, which flowered with me on the opening day of the new year. Cheering is it to see this little flower once more, and so blithesome does it seem that we are disposed to agree with the description of the couplet, which says—

"The Aconite that decks with gold
Its little merry face."

I cannot at this moment remember who spoke of it as appearing with "its Elizabethan ruff," but it was a fitting description of the

arrangement of the leaf around the flower which adds so much to its beauty. Common and cheap as is this little flower, it is a great favourite of mine, and, in addition to my former stock, about two years ago I planted a clump in front of my sitting-room window, so that when the weather did not permit of venturing outside, one's eyes might be gladdened by the sight of these little cups of gold. Its name in Miller's time was the "Winter Wolfsbane," and it is only indulging a slight play of fancy to think of it as a very bane to the dullness so apt to haunt us in these short days.

But among the flowers of the season, peerless stand the Christmas Roses with their beautiful flowers, which for all their beauty seem to be cold and to lack the enticements of some other flowers which endear themselves to us by other charms than those possessed by this queen of the outdoor flowers of winter. Cold as it seems, the Christmas Rose is very beautiful, and a large clump covered with flowers and protected by a handlight from stormy weather will give much pleasure and will dwell long in one's memory. All around the early flowers are piercing through the dark soil, holding forth the promise of longer and brighter days, which shall assuredly bring fair and welcome blossoms in their train and reveal to us once more the charms of that season of pleasure to the lover of early flowers—spring.—S. ARNOTT, *Dumfries*.

[Since the foregoing article was put in type Mr. Arnott writes that on Wednesday, 3rd inst., the weather, which had been mild, changed, and frost with occasional flakes of snow succeeded. The frost has been very severe, and on Friday night, the 5th inst., an inch of snow fell. On Monday, the 8th inst., the wind shifted from east and north to south-east, and there was bright sunshine.]

HINTS ON INDOOR DECORATION.

THE introduction of plants of various descriptions into the dwelling rooms of the wealthy in the land, adds so much to their beauty from an artistic point of view that no house of pretension can be considered complete unless a few well selected plants are arranged in suitable positions in its principal apartments. Time was when plants suitable for the purpose were comparatively limited in variety, and so long as they supplied the requisite colours the form of their outline was a matter of secondary consideration.

The advancing taste of the present generation brought about a gradual change, and beauty of form began to be considered of equal importance to that of colour. This growing taste created a demand for plants which were graceful and elegant in outline. The demand quickly received attention, and by the aid of indefatigable collectors in distant lands, as well as hybridists at home, our gardens now abound in plants which are as highly prized on account of their graceful forms as are others for their bright or delicately coloured flowers. With plenty of these materials at command, combined with originality and taste in conception, as well as skill in execution, the stately halls and luxurious rooms of the castle or the mansion may be made veritable temples of artistic beauty. I do not mean to infer by this that a lavish display of plants is by any means desirable; on the contrary, I think the tendency of the present day errs in the direction of employing too many plants in the embellishment of dwelling rooms, which should never be made to vie in this matter with the conservatory proper. The effect I have above described should be mainly produced by the judicious disposal of plants which vary in size and boldness of outline according to the dimensions of the rooms in which they are placed. A strict attention to the proportion and colours of surroundings is to my mind the foundation of success in plant decoration of all kinds.

Perhaps no class of plants contribute so much toward the production of a striking effect as the various species and varieties of Palms, a good stock of which is essential if the work is to be well done. For placing in entrance halls Palms of large size are exceedingly effective. Those with long arching leaves are preferable; but in all instances where plants of considerable dimensions are employed they ought to have a good length of straight stem below the fronds, so that the view across the structure be not greatly impeded. *Chamærops Fortunei* or *Thrinax elegans* when they have grown to this condition are useful for the purpose, the first named lasting in good condition in unfavourable positions longer than most Palms. *Seaforthia elegans* was at one time our most effective Palm for use in a large state, its great weakness being that it did not last well. Now, however, that *Kentias* are becoming plentiful the *Seaforthias* are being gradually driven out of the field. One or more of these *Kentias* placed in large entrance halls in positions where lounges and settees can be grouped around the base produce a far more striking effect than numbers of smaller plants. If flowering plants are required in this apartment, it is an excellent plan to arrange them in window boxes or jardinière, fitted with tins, and placed in the window recesses. In some instances there are corners which

seem especially adapted for groups of plants; when this is the case shallow tins should be made to fit into the corners and extend as far as it is desirable to form the group. To add finish to the outline of such groups, and hide the pots, I know of nothing better than rustic pieces of oak fastened together in such a way as to appear interwoven, and stained or varnished so as to resemble the woodwork around.

Turning to the drawing room or the library, which are generally large, there is plenty of scope for making a good display without causing the plants to appear too obtrusive. There is usually some position in which tall slender Palms from 5 to 7 feet in height can be arranged with marked effect. When the width of the rooms will admit of the use of Palms with long arching fronds *Kentias* answer the purpose admirably. In many instances, however, height is required without a great spread of leaves, then *Areca glaucophylla* and *Cocos plumosa* will be found both useful and effective. Palms of smaller sizes if arranged on pedestals have the necessary height without unduly impeding the view across the room. A few Palms dotted about at irregular intervals add much to the general effect of a well-arranged room. Rustic baskets arranged with small Ferns in pots, and whatever flowering plants are in season, and placed in well chosen positions, sometimes on pedestals beneath the Palms, supply the opportunities for effecting tasteful arrangements which will bear minute inspection. In addition to these, a few vases should be set apart for single specimens of flowering plants, such as *Erica hyemalis*, the very beautiful varieties of *Epacris*, *Azalea mollis*, *Begonias*, Ivy-leaved and Zonal *Pelargoniums*, as the season for each in turn comes round. The appearance of these embellished rooms is then ever changing, and always beautiful.

Some of the choicest materials should be reserved for the adornment of the boudoir. It is seldom that large plants of any kind are admissible here. Among Palms, *Cocos Weddelliana*, *Geonoma gracilis*, and *Euterpe edulis* are, on account of their graceful habit, perhaps the best. *Phoenix rupicola*, while it still retains some of its strap-shaped leaves, is both novel and effective, especially when placed on a rather high pedestal. *Eulalias japonica* and variegata are also excellent plants for decorative work. Ornamental stands of various devices, provided with tins for holding groups of plants in pots, are frequently used in the boudoir. At the present time these may be effectively filled with Roman Hyacinths, Lily of the Valley, Tulips, Fuchsias, intermingled with small Palms, plants of *Curculigo recurvata*, *Cyperus alternifolius*, *Pteris* and Maidenhair Ferns. Where several of these are in use it is well to use only one colour in the arrangement of each. Brackets having cavities in the centre large enough to admit of small Ferns being placed in them, when thus filled look well disposed around the walls, so also do small china receptacles filled with Ferns and placed in suitable positions on tables or brackets.

In carrying out this as well as all other kinds of decorative work, one great point to aim at is to study the taste and wishes of those whom our efforts are intended to delight; in doing this we shall learn much that will enable us to rise to higher flights of artistic conception, while we are also striving to do that which means so much to all true Britons—viz., our duty.—H. DUNKIN, *Castle Gardens, Warwick*.

CROTONS IN WINTER.

APART from the beauty which these foliage plants possess during the summer, they are a great attraction during the dull days of winter. Their brightness and richness of foliage render them most desirable objects, and especially when they can be viewed *en masse* in a house. Messrs. Kerr & Sons, Aigburth, Liverpool, have long been famed for their collection of Crotons, but I hardly expected to see such a sight as that which I beheld on that memorable day—November 17th last—when a terrific gale blew over the country, and especially over the nursery in question. To be inside a large span-roofed house, full of the choicest varieties of this foliage plant, and with such a guide as Mr. Ranger, their manager, made one almost forget for the time that I ought to have been crossing the Irish Channel at that moment.

The varieties that most attracted my attention were the under-mentioned:—*Musaicus*, medium-sized foliage, very richly variegated with carmine red. Baron Frank Selliere has rich red foliage. Flamingo was especially showy, the centre of the leaves red, edged with a darker tint. *Aigburthiensis* belongs to the narrow-leaved section, the leaves mainly a bright primrose yellow, of a very free branching habit. *Mortefontaineensis*, the foliage of this is fiddle-shaped, is richly variegated with deep crimson and red; the habit of growth is excellent. *Carrieri* may best be described as a yellow *Weismanni*, it having more of that colour than this old favourite. *Thomsoni* has large fiddle-shaped leaves, golden yellow, with narrow green margin. *Hanburyanus* is one of the large-leaved pale coloured varieties, but very handsome.

Golden Ring is quite one of the best of the narrow-leaved section, especially for table decoration; the foliage is so beautifully mottled and marbled, the long semi-drooping leaves render it a handsome variety.

Madame Charles Heine is another gorgeous coloured variety, and Aneitumensis has long leaves, reticulated bright yellow. Aigburth Gem is regarded as being the best variety in existence for table or room decoration. The colour mainly is red, which is what is required where artificial light is employed. In style of growth this variety resembles Interruptum, but so much more graceful. Baroness Rothschild has large broad leaves, variegated deep carmine red; and Chelsoni has narrow pendent foliage, deep red and yellow. Very few Crotons excel Sinitzinianus for elegance of form, either as small or large plants. The long interrupted foliage is very largely variegated with bright primrose yellow. Newmanni has large noble foliage, variegated vermilion crimson, an exceedingly showy variety, fine habit, and abundantly clothed with leaves. Although I name Warreni last it is, nevertheless, one of the best; its long pendulous waved and twisted foliage fits it for any form of decoration, variegated with red and crimson.—E. M.

PHRYNIUM VARIEGATUM.

FOR decorative purposes few ornamental foliage plants are more useful than Phrynium variegatum. When well grown this plant forms an attractive feature in the stove, and it is also admirably adapted for table decoration. The character of this Phrynium is so well depicted in the illustration (fig. 4) that a detailed description is unnecessary. It usually grows from a foot to 18 inches in height, and the foliage is prettily marked with deep green. In most cases it is grown in a stove, but an intermediate temperature suits it, and if cultivated under the latter conditions it is hardier and more suitable for the embellishment of warm apartments. The engraving has been prepared from a plant supplied by Messrs. E. D. Shuttleworth & Co., Albert Nurseries, Peckham Rye.

OSMUNDA REGALIS.

I AM sending a photograph of a noble specimen of this truly "Royal Fern," growing in the grounds at Hendrefoilan, near Swansea. It is the finest single plant that I have seen, although acquainted with many a fine Brake in its undisturbed boggy habitat. The following figures will demonstrate the robust luxuriance and happy condition thereof:—Diameter of the crown, 7 to 8 feet; ditto, measuring across top of the plant from tip to tip of fronds, 18 to 20 feet. In this measurement the fronds occupied their natural position, but if bent outwards several more feet could be added. It grows in a boggy position in a portion of the grounds that are in semi-wilderness state, and though amply shaded by native tree-growth it is not at all overcrowded or confined by undergrowth. Mr. Hawkins may safely be trusted to guard this interesting Fern, as well as many other good plants that nestle cosily in the many sly nooks that fond hands in the past have laboured to create here and there in these woodland gardens.

Mr. Hawkins's name is more familiar to your readers in connection with Ewenny Priory, where he served eighteen years, and only left at the death of his late employer, Col. T. Picton Turberville, a surviving brother succeeding to the estate. The widow, Mrs. Turberville, took up her abode at Hendrefoilan, retaining Mr. Hawkins in her service, where we find him actively engaged in renovating a good old garden which has for some years been badly neglected, and preparing again for "friendly" hostilities in the South Wales horticultural arenas.—BRADWEN.

[The plant is a magnificent one, but the photograph is unfortunately not suitable for reproduction.]

ZONAL PELARGONIUMS IN WINTER.

MOST gardeners are cognizant of the fact that Zonal Pelargoniums are valuable for producing a grand display of bloom during the winter, and yet all do not attend to their cultivation for that purpose so closely as they might do with advantage to themselves. Compared with Chrysanthemums Zonal Pelargoniums can well hold their own, and were they given half as much attention in private gardens the results would be most satisfactory. It is, however, in a few trade establishments that these useful plants are seen at their best, and I was reminded of this by a recent visit to Mr. H. J. Jones, Rycroft Nursery, Lewisham. Here, as readers of the *Journal of Horticulture* are aware, Chrysanthemums receive special attention; but other plants are by no means neglected, a feature at this time of the year being the Zonals. A long span-roofed house is devoted to their culture, and this is now filled with plants that are flowering profusely. All the best varieties in cultivation are grown, and in addition to those sent out by other firms Mr. Jones has many new kinds of his own raising. The whole make a display that for brilliancy can hardly be excelled, the bright colours showing up splendidly when everything outside is covered with snow. The single varieties flower with characteristic freedom, while the double ones are well represented, and it may be of interest to enumerate a few of the best newer kinds now in bloom.

Amongst the single varieties introduced last year Mr. W. Wright was particularly noticeable. This has a grand truss and flowers of a deep salmon shade, the plant possessing a robust habit. Mr. B. C. Ravens-

croft is conspicuous for its bold crimson scarlet pips, the white eye in the centre of each forming a pleasing contrast. As a white Edith Syrratt is very fine, the flowers being extra large and freely produced. Another comparatively new variety of exceptional merit is Mrs. W. Wright, a variety that has been certificated several times. It is of a bright purplish magenta shade, possibly the nearest approach to a blue extant. The plant is of good habit and profuse in flowering. Mr. F. T. Shepley is a fine magenta crimson, and Mr. D. B. Crane is one of the best scarlet varieties in existence. All the above-mentioned kinds have been introduced by Mr. Jones, and it is probable that they will in due course be found in many collections. Of those sent out by other firms Flamingo, a fine orange scarlet, was flowering freely, the same also applying to Galatea, salmon rose; and Puritan, white, delicately tinted salmon.



FIG. 4.—PHRYNIUM VARIEGATUM.

Marquis of Dufferin has large, rich, crimson magenta flowers, and Cyclops is a splendid dark rich crimson with a white eye. Lord Salisbury is a magnificent variety with enormous, richly coloured pips of great substance, and Conde is a brilliant crimson scarlet.

With reference to the double or semi-double varieties of recent introduction, Mr. W. S. Sach appeared to be an improvement on the well-known F. V. Raspail, the pips being large and the trusses of bloom very freely produced. Colossus is a gigantic bloom of a rich reddish crimson hue, and in Mr. J. Surman we have a pleasing blush pink shade. Mr. John Spencer Phillips is a charming deep salmon, the plant being dwarf and very free. Golden Rain is a variety that should be extensively cultivated; the flowers are large, of excellent form, and a striking orange scarlet colour. Nydia has white blooms, and a pink centre being conspicuous in each pip it is an attractive kind. The same may be said of Turtle's Surprise, a sport from F. V. Raspail, which is a grand free-flowering variety. White Abbey is considered an improvement on many existing double white varieties, inasmuch as it has a dwarf spreading habit and chaste flowers of fine form. Besides the foregoing the best of the older varieties are represented, though these it is needless to mention.—C.



EVENTS OF THE WEEK.—The Committees of the Royal Horticultural Society will meet for the first time this year at the Drill Hall, James Street, Westminster, S.W., on Tuesday, the 16th inst. On the following day, the 17th inst., the annual general meeting of the Gardeners' Royal Benevolent Institution will be held at Simpson's, 101, Strand, London, W.C., at 3 P.M. In addition to reading the Committee's report and the accounts of the Institution, fifteen pensioners will be elected on the funds. The members and friends will hold their annual supper at 6 P.M. on the day mentioned and at the same place. Tickets can be obtained on application to the Secretary, Mr. G. J. Ingram, at the office, 50, Parliament Street, S.W.

— **THE WEATHER IN LONDON.**—As in other places, the weather has been very severe in the metropolis during the past week, frost, snow, and fog being prevalent. On Friday the 5th inst. the thermometer in Fleet Street did not rise above 18°, and it is reported to be the coldest day experienced in London for more than twenty years. The nearest approach to it occurred on the 4th of January last year, when the maximum was only 22°, but with this exception the lowest day temperature recorded in the metropolis during the twenty-three years, 1871-1893, was 25°. Saturday and Sunday were also very cold, but on Monday a change was apparent, the temperature gradually rising. On Tuesday it rained, but a slight frost occurred again at night. Wednesday, however, opened mild, and at the time of writing this paragraph it is raining.

— **WEATHER IN THE NORTH.**—The past eight days have been marked by very severe weather. Frost set in on New Year's Day and continued increasing in intensity till on the night of the 6th, when 30° of frost were registered. Snow fell on the previous night to about 4 inches in depth. Even lower temperatures are reported from some districts; from one, 38° of frost. On Monday morning 14° frost were recorded, fully an inch of snow fell during the night, but a thaw seems probable on Tuesday morning.—B. D., *S. Perthshire*.

— **UNITED HORTICULTURAL BENEFIT AND PROVIDENT SOCIETY.**—The quarterly meeting of this Society was held at the Caledonian Hotel on Monday evening last. Five new members were elected. There being an accumulated balance in the Benefit Fund, it was resolved that the same be added to the credit of members on all amounts above £1 at the rate of 4d. in the £1. The annual meeting will take place on Monday evening, March 12th, at 8 o'clock, and Mr. B. Wynne is invited to preside on that occasion.

— **A FLOURISHING HORTICULTURAL SOCIETY.**—The first annual meeting of the Welshpool Horticultural Society was held in the Town Hall recently. The balance sheet of the last Show was taken as read, and showed a balance of £111 11s. 3d. It was decided to hold the next on August 9th and 10th, in Powis Castle Park, by permission of the Right Hon. the Earl Powis. Mrs. Naylor of Leighton Hall was elected President, Mrs. W. F. Addie being re-elected Hon. Secretary, Mr. F. D. Ward Secretary, and Mr. Matthew Poole Hon. Treasurer. The General Committee of last year was also re-elected.

— **THE BIRMINGHAM AMATEUR GARDENERS' ASSOCIATION.**—A number of amateurs in the district were desirous a year or so since that a Society should be formed for their meeting together to read papers, have discussions, and exhibiting the products of their gardens; but membership to be confined to those only who do their own gardening as a recreation, not for profit, and the Association now has 152 members. Papers and discussions are initiated chiefly by themselves, but during each session one or two well known horticulturists are invited to read a paper; and in the syllabus for the coming winter session two papers of this kind are to be read, one on hardy fruits for suburban gardens and their culture; the other on Carnations, Picotees, and Pinks suitable for town gardens. The members had three excursions to well known gardens during the past year. In June to Stonleigh Abbey, Kenilworth; in July to Canwell Hall, Tamworth; in August to Impney, Droitwich. Mr. W. B. Griffin is a very energetic Secretary, and with a good Committee, the Association makes a considerable headway, and is doing much good.

— A PRIZE of 1250 francs is offered by the Natural History Society of Dantzic for the best means of destroying the poisonous insects in the forests of Western Prussia.

— WE understand that the Queensland Government, in pursuance of their policy of retrenchment, have abolished the post of Government botanist hitherto held by Mr. F. M. Bailey.

— **SWEET PEAS TRAVELLING.**—Will any of your readers inform me whether the cut blooms of Sweet Peas, if carefully packed, will travel well and be fit for market purposes after a railway journey?—SUBSCRIBER.

— **THE MULBERRY TREE** at Bourg-le-Roi in Southern France is, says a correspondent, about 40 feet high, and supposed to be 250 years old. A short distance from the ground the trunk is 9 feet in circumference.

— **THE POTATO CROP.**—It is stated that the Potato crop of 1893 occupied an area of 527,821 acres in Great Britain, and of 1,262,674 acres in the United Kingdom, as compared with 525,361 and 1,276,835 acres respectively in 1892.

— **CYCLAMENS AND PRIMULAS AT READING.**—Messrs. Sutton and Sons inform us that their Cyclamens and Primulas are now in bloom, and if any of our readers are in the neighbourhood of Reading the firm will be glad for them to see the display.

— **LAPAGERIA ALBA SEEDING.**—Could any of the numerous readers of the Journal inform me the time that *Lapageria alba* seed pods will take to ripen? Will twenty pods be likely to injure the plant, which is about thirty years old?—J. M.

— **ROYAL BOTANIC SOCIETY.**—It is reported that the summer Exhibition of the Royal Botanic Society will be held on Wednesday, May 30th, instead of on May 23rd, the date originally fixed, as that is the opening day of the Royal Horticultural Society's Exhibition in the gardens of the Inner Temple.

— **TOMTITS.**—These are extremely numerous this year. I hear they are molesting bees in some places in the South of England; and in Lanarkshire fruit buds, as they usually do. In order that Mr. J. Hiam may see their depredations, I would be pleased to show any commissioner he may appoint to examine and report, if he cannot come and see for himself.—A L. B.

— **FLOWER SHOW AT GHENT.**—It is reported that the next annual horticultural Exhibition of the Royal Agricultural and Botanical Society of Ghent will be held from the 11th to the 13th November. The Show will consist of Chrysanthemums, ornamental plants, and Orchids. The members of the Royal Agricultural and Botanical Society as well as amateurs and foreign nurserymen alone will be permitted to exhibit.

— **THE WREN AND GREEN FLY.**—One day recently I noticed a wren moving quickly about among some *Pelargonium* plants. I was curious to know what the bird was doing, so went quietly up to the plants to observe its movements, and saw at once that it was hunting for green fly and eating them. The plants are growing in a heated pit. I never knew before that the wren would eat green fly, and I should be very loth to disturb such a careful watcher for this troublesome plant pest.—GEO. GARNER.

— AT the annual country meeting of the ROYAL AGRICULTURAL SOCIETY to be held at Cambridge on Monday, June 25th, 1894, and the four following days, arrangements, we understand, will be made for exhibiting cider, perry, preserved fruits, jams, honey, and other products of the garden and orchard. Four classes are provided for cider and perry, the prizes amounting to £40. Jams and fruits occupy but three classes, and £18 in prizes are offered in this section. Among the eighteen classes devoted to hives and honey £36 will be given in prizes.

— **WOOLTON GARDENERS' MUTUAL IMPROVEMENT SOCIETY.**—On Thursday evening, January 4th, a paper on the "Culture of *Calanthes*," by Mr. R. Pinnington, gardener to Mrs. Banner, Blacklow House, Roby, Liverpool, was read before the members of the above Society. In the absence of Mr. Pinnington, who is only just recovering from a serious illness, the paper was read by Mr. R. G. Waterman, the Hon. Treasurer, and listened to with great interest, a good discussion taking place afterwards. It was the unanimous wish of the members that the Secretary convey to Mr. Pinnington a hearty vote of thanks for the paper, together with their sympathy in his illness, and a hope that he may soon be restored to good health.

— GARDENING APPOINTMENT.—We are informed that Mr. Rust, who for many years has had charge of Eridge Castle Gardens, having resigned through ill health, has been succeeded by Mr. Arthur Wilson, until now foreman at the establishment. We are pleased to hear also that Mr. Rust has been granted a handsome pension by the Marquess of Abergavenny.

— RAINFALL AT THE FRIARY, OLD WINDSOR, BERKS, FOR 1893.—Mr. J. Williams sends us a tabulated record of the rainfall at the Friary Gardens during the past year. From this we learn that the greatest fall for any month was during October, this being 7.20 inches, 2.78 falling on the 10th. In February 3.33 inches of rain fell, 2.16 November, and 2.62 December. The total for the year amounted to 23.64 inches, falling on 135 days.

— DECEMBER WEATHER IN HERTFORDSHIRE.—Mr. E. Wallis, The Gardens, Hamels Park, Buntingford, Herts, writes:—The weather during the past month has been of a very mild and open nature, most suitable to any operations connected with horticulture. Rain has fallen upon twelve days during the past month. Maximum in any twenty-four hours 0.45 on the 14th; minimum, 0.05 on the 12th; total during the month, 2.28, against 1.73 of 1892. During the past year I have registered 20.94 of rainfall. During the year 1892 I registered 26.28, or in other words, 540 tons of water less per acre fell during 1893 than during the year 1892.

— THE TOTAL RAINFALL AT ABBOT'S LEIGH, HAYWARDS HEATH, Sussex, for the past month was 2.18 inches, being 0.56 inch below the average. The heaviest fall was 0.38 inch on the 20th. Rain fell on fourteen days. The total for the twelvemonth was 24.60, which is 5.92 inches below the average. The total for 1884 was 24.05 inches, so that 1893 has not been the driest year on record after all. The maximum temperature in the shade was 55° on the 13th, the minimum 21° on the 31st. Mean maximum 44.24°; mean minimum 33.26°. Mean temperature 38.75°, slightly below the average. Snow fell for several hours on the afternoon of the 2nd, clearing out to frost in the evening.—R. I.

— FROST IN THE ISLE OF WIGHT.—Mr. C. Orchard, Bembridge observes:—"The weather here last week was very severe. On Thursday January 4th, the north-east wind was very piercing, blowing half a gale, with about 6° of frost all the day. On Thursday night some snow fell, and the wind kept up, while the thermometer registered 17° of frost, which penetrated dwelling houses and stores, as well as glass structures, freezing in places that have never been known before by the oldest inhabitant; in fact it seemed a perfect blizzard. The damage to plants and roots, such as Potatoes, in stores cannot yet be estimated. Fires, lamps, and stoves entirely failed to keep the frost from the greengrocers' shops and stores in Ryde and the other towns in the island, the contents in most cases being frozen quite hard."

— WEATHER AT SWANMORE, HANTS.—Mr. E. Molyneux says:—The weather has undergone a decided change since December 25th, which was considered to be the warmest Christmas Day for the last fifty-two years experienced here. On Wednesday the thermometer registered 12° frost, accompanied with a blinding snowstorm, similar to that experienced in 1881, but not quite so severe; 14° frost were registered on the 4th. On Friday the thermometer at 5 A.M. went down to 8°, or 24° frost. During the sixteen years that I have been here this is the hardest frost we have had. At no hour of the day did the thermometer rise above 12°, and the wind being bitterly cold. Saturday the 6th, 21° frost was registered. At the time I now write, the 8th, a slow thaw has set in, the wind being in the south.

— THE WEATHER LAST MONTH.—Mr. W. H. Divers, Ketton Hall Gardens, Stamford, writes:—December was showery, with gales on 8th and 13th. It was remarkable for a very high reading of barometer—viz., 30.73 inches at 9 A.M. on 30th; for an extremely low reading, 28.62 inches at 3 P.M. on 20th; and for a rapid rise from 28.98 inches at 6 P.M. on 13th to 29.99 inches at 5 P.M. on 14th. Total rainfall was 1.34 inches, which fell on nineteen days, the greatest daily fall being 0.25 inches on the 12th; the total is 1.00 inch below the average for the month. Highest shade temperature, 56° on 13th; lowest, 18° on 3rd. Mean daily maximum, 45.70°; mean daily minimum, 32.12°. Mean temperature of the month, 39.80°. Lowest on grass, 13° on 3rd; mean minimum on grass, 27.61°. Wind was in a westerly direction twenty-six days. The garden spring ran 3½ gallons per minute on 31st, which is the lowest quantity during the six years in which measurements have been taken.

— WEATHER IN DEVONSHIRE.—We have had very sharp frosts in South Devon with biting east winds. On Saturday morning the thermometer registered 19° of frost, on Sunday morning it registered 22°. Snow fell on Friday night to the depth of 15 inches.—J. M., *Topsham*.

— SEVERE WEATHER IN SUSSEX.—"R. I." writes:—During the 5th inst. about 6 inches of snow fell, but fortunately without any wind to blow in drifts. The following are the lowest readings of the thermometer in the shade:—On the 4th, 22°; 5th, 10°; 6th, 16°; 7th, 8°; 8th, 13°. To-day, 8th, the wind is S.E., and it is much milder.

— THE WEATHER IN SCOTLAND DURING DECEMBER.—Mr. G. McDougall, Ravenna Cottage, Stirling, says:—The past month has been a very wet one. Total rainfall, 6.906 inches, which fell on twenty-four days, of that 3.391 inches fell the first nine days; on two days the fall exceeded an inch—the 8th, 1.140 inch; and the 24th, 1.156 inch. Frost was registered on ten nights. The warmest day was the 16th, with 53.9°; the warmest night was the 4th, with 46.5°; the coldest day was the 1st, with 33.2°; the coldest night was the 2nd, with 15.2°. Mean maximum, 46.2°; mean minimum, 34.1°.

— SUMMARY OF METEOROLOGICAL OBSERVATIONS AT HODSOCK PRIORY, WORKSOP, NOTTS, DECEMBER 1893.—Mean temperature of month, 39.6°. Maximum on the 13th, 54.7°; minimum on the 2nd, 19.0°. Maximum in sun on the 16th, 87.8°; minimum on grass on the 3rd, 11.0°. Mean temperature of air at 9 A.M., 38.8°. Mean temperature of soil 1 foot deep, 39.8°. Nights below 32°, in shade, ten; on grass, twenty-four. Total duration of sunshine in month, thirty-nine hours, or 17 per cent. of possible duration. We had sixteen sunless days. Total rainfall, 2.84 inches; rain fell on twenty days. Wind average velocity, 12.6 miles per hour. Velocity exceeded 400 miles on twelve days, and fell short of 100 miles on four days. Approximate averages for December.—Mean temperature, 37.1°. Sunshine, thirty-two hours. Rainfall, 1.97 inch. A mild and stormy month with very little frost and a fair amount of rain. During the last seventeen years three Decembers only have been warmer.—J. MALLENDER.

— THE RECENT SEVERE WEATHER.—During the past week exceptionally severe weather was experienced in all parts of the country. The temperatures recorded over England were as low, and in some respects even lower, than any observed for very many years past. During Wednesday night or early Thursday morning the thermometer in the screen fell to a minimum of 16° at Jersey, 15° at Oxford and the North Foreland, and 13° at Dungeness, the readings being from 19° to 23° below the average for the time of year. In the metropolitan area also some very severe weather occurred, the minimum reading being 12° at Tulse Hill and Wandsworth Common, but 13° at Greenwich and 14° at Brixton. Equally low temperatures were observed at Brixton both in December, 1890, and in January, 1891, but a keener frost has not been experienced in that locality since January 21st, 1891, when the sheltered thermometer fell to 12°. Over the Continent the weather has been very severe, the lowest temperatures being — 3° Fahrenheit at Munich, zero at Berlin, 5° at Cuxhaven, 7° at Paris, and 8° at Brussels. At Shorncliffe on Friday night the thermometer went down to zero. The temperature officially taken at Dover on the same day was 23° below freezing. The lowest reading reported to the Meteorological Office on Saturday morning was 5°, or 27° below the freezing point, at Loughborough, in Leicestershire. At Parsonstown, in King's County, Ireland, the thermometer in the screen registered 6°, at York 10°, at Oxford and Cambridge 11°, and at Shields 12°. The frost was continuous throughout Saturday in many parts of the kingdom, and at York the thermometer did not rise above 21°. On Sunday the frost was again very severe, and a thick fog occurred in many parts of the kingdom. The weather in Scotland has been excessively cold. In Dundee on Sunday 14° of frost were registered. At Invergowrie, four miles west, there were 24°, and at Coupar Angus it registered 11° below zero. Snowstorms are also reported from all parts of the kingdom. From authentic records received on Tuesday it is quite clear that the recent frost was of unusual severity in all parts of the kingdom. At Bawtry, in Nottinghamshire, the thermometer went as low as zero. The lowest reading, with the exception of Coupar Angus, taken by carefully verified instruments, correctly exposed, was at Braemar and at Worksop, where the thermometer fell to 4° below zero. The mean temperature for last week was from 10° to 12° below the average over nearly the whole of England, as well as in the south of Ireland. The Rev. Page-Roberts reports that at Scole Rectory, Norfolk, the thermometer fell to 1½° below zero.

— BUTTERFLIES.—A northern correspondent says:—"So untoward were the summers, 1890, 1891, and 1892, in the Leadhill district, that in the last named year insect life, 'midges' excepted, had almost disappeared, yet in 1893 saw countless multitudes of many sorts scarcely ever seen before in the neighbourhood. Butterflies were present in thousands; and what was very remarkable, they swarmed in houses, new and old alike. In one of the former there were clusters of them hanging to the cornice of the ceiling not unlike swarms of bees, a new thing in my experience. So well may the question be put, Whence come they?"

— A BENEFICIAL FUNGUS ON GRAPES.—Writing to "The Pacific Rural Press," Mr. Arthur P. Hayne states that while investigating the fungi attacking the Grapes of California, he found one which may prove an advantage. This is *Botrytis cinerea*, which is essential to the production of the best Rhine wines of Johannisberg. Grapes which are covered with this mould are sold for as much as £230 a ton. The fungus is not altogether a blessing, for when it attacks black or red Grapes it robs them of their colour and destroys the tannin. Besides this, it concentrates the sugar until it becomes impossible to make a dry wine.

— GRAND YORKSHIRE GALA.—The annual meeting of guarantors and life members of the Grand Yorkshire Gala was held on the 5th at Harker's Hotel, York. In the absence of Sir Joseph Terry, the Chairman of the Council, the chair was taken by Mr. Ald. Milward, who, at the commencement of the business, expressed regret that Sir Joseph was unable to be present. He moved the election of the Lord Mayor as President for 1894. Mr. G. Balmford seconded the motion, which was carried unanimously. Mr. Joseph Wilkinson was re-elected Treasurer, Mr. C. W. Simmons Secretary, and Messrs. Pearson and Taylor Auditors. The voting for the election of twenty-three members on the Council then took place, when the following were elected:—Messrs. R. Anderson, G. Balmford, J. Blenkin, S. Border, J. Biscoomb, G. Browne, J. W. Craven, M. Cooper, H. C. Day, R. P. Dale, L. Foster, G. Garbutt, T. G. Hodgson, J. J. Hunt, A. Jones, G. Kirby, J. M. Lambert, Alderman Milward, E. W. Purnell, J. Rotherford, H. Scott, W. S. Sharp, and J. B. Sampson. Grants were made for the various departments of the Gala, as follows:—Floral Committee, £600; music, £120; fireworks, £100; balloons, £75; amusements, £150. The Secretary announced that he had secured several special prizes, including one of £5 from Mr. Alderman Close, and another of £5 5s. from Messrs. Backhouse & Sons.

— THE DEVON AND EXETER GARDENERS' MUTUAL IMPROVEMENT ASSOCIATION.—The following is the spring programme of this Association, the meetings to be held in the Council Chamber of the Guildhall, Exeter. 10th January, Mr. F. Anning, gardener at Ford House. Subject:—"Strawberry Culture under Glass." 24th January, Mr. T. E. Bartlett, Knightleys Gardens. Subject:—"Thrift; or, How to become Independent." 7th February, Mr. Albert George, lecturer on horticulture under the Devon County Council. Subject:—"Experiences in Lecturing on Horticulture in the County of Devon." 21st February, Mr. Alfred Tucker, Exeter (lately Assistant at the Royal Gardens, Kew). Subject:—"Kew Gardens and Kew Gardeners." 7th March, Mr. G. Camp, Culver Gardens. Subject:—"Exotic Ferns and their Culture." 21st March, Private Hyacinth and Spring Bulb Show. 4th April. Subject:—"The Papers of Last Session." The members held their annual supper on January 5th. There was a large attendance. Mr. W. Mackay presided, and among those present were Messrs. Lansdale and Weeks, Vice-Chairmen; A. Hope, Hon. Secretary; A. George, Lecturer in Horticulture under the Devon County Council; T. Stoneman, Teacher of Botany at the Exeter Museum, and others. The Chairman announced letters regretting absence from the President (Sir Dudley Duckworth-King, Bart.), Messrs. D. C. Powell, J. Franklin, and T. Bartlett (Joint Hon. Secretary). The Chairman, in proposing "The Devon and Exeter Gardeners' Association," said that the Society did a great deal of good in bringing gardeners in the neighbourhood into closer communication one with the other; it afforded a blending of ideas, bringing about, he hoped, better results in the cultivation of different plants. The essays during the session had been listened to by large audiences. The reading of essays tended to give the essayists a desire for greater exertion to search for knowledge in connection with the particular branch of business. What the Committee would wish to see at the meetings was the presence of more young debaters. They could, by listening to the essays and taking part in the discussions, learn much which would be of considerable benefit to them in the future. Mr. Lansdale submitted "The President and Vice-Presidents," referring to the interest they took in the Association. The gardeners were much indebted to these gentlemen for throwing open their spacious and splendidly kept gardens for inspection.

— MAGNOLIA STELLATA.—"J. S., Grimston," writes;—I would like to draw the attention of those of your readers who may not know this handsome ornamental Japanese flowering shrub, to the fact that it is well adapted for forcing, and at this period of the year would prove most useful. The flowers are white, with a slight perfume. One drawback is that it flowers without foliage. We have here a small plant 2 feet in height, carrying about thirty flowers.

— THE KINGSTON AND SURBITON GARDENERS' ASSOCIATION.—The following is the programme of lectures of this Association for the next three months:—Jan. 16th, "The Dahlia," Mr. A. Dean; Jan. 30th, Discussion—"How Can we Make our Chrysanthemum Exhibitions more Attractive," Mr. Cushon; Feb. 13th, "The Carnation," Mr. G. Woodgate; Feb. 27th, "The Culture of Mushrooms," Mr. Benson; March 13th, Discussion—"How Best to Secure a Good Supply of Peas over a Long Season," Mr. Cox; March 27th, "Hardy Spring-flowering Bulbs," Mr. W. Barr.

— COSTOS IGNEUS.—I was very pleased to see in your last week's Journal (page 11) an illustration and notice of this beautiful but little known plant, because I so often see it in its full beauty at the Birmingham Botanical Gardens, where Mr. Latham grows it well year after year, and it is always a striking plant in the early winter months. The colour is a rich deep orange, and the form of the flower brings to mind *Lychnis Haageana*, the entire habit of the plant being dense growing and sturdy. Mr. Latham grows it in a warm stove, and flowers it generally in the show Orchid house; it is of easy culture, moisture and heat suiting it.—W. D.

— SPIRÆA ASTILBOIDES.—Although this *Spiræa* will never replace the old and useful *S. japonica*, it is, nevertheless, invaluable for its gracefulness. *S. astilboides* bears gentle forcing only, and three good batches may be obtained, the first by gentle warmth after the plants have started well into growth, the second by cool greenhouse treatment, and the third by keeping the plants outside, behind a north wall, as long as possible. Plants that have been flowered in pots will bloom again if they are well cared for, but they do not flower so well as those that have been purposely prepared for forcing. It is a good plan to have a stock of plants, so that they can be flowered in pots every other year. After flowering, the plants may be divided and planted out, when the weather is favourable, in deeply dug and well manured ground. A sunny, open spot should be selected for them.—B.O.

— IS THE YEW POISONOUS?—This question is constantly being asked, and more often at this time of year, when the so-called berries of this tree are plentiful, and children occasionally partake of them. The other evening, when looking through Cæsar's "De Bello Gallico," I found it related in liber vi., par. xxxi. that a joint King of a German tribe "killed himself with Yew." *Se exanimavit taxo*. A footnote explains "taxo" to mean the "juice of the Yew;" but as in par. xxix. it is stated that the time of year was "when the grains began to ripen," it is most likely that the poison would be obtained from the Yew, not as an extract of the "juice," but as a decoction of the leaves. Birds when hard pressed for food devour the fruit, so far as I have seen with no bad effects following; and cattle and horses can eat shoots of the Yew with no after bad effect, though there is no doubt of both having been poisoned under certain conditions. No reference is made in Veitch's "Manual of the Coniferae" as to the fatality mentioned by Cæsar. I have not Loudon's work by me to refer to, but some of your many readers may be able to say something on the matter as to whether the Yew is really poisonous to man.—B.

— RAILWAY GARDENING.—"A Traveller" writes:—*Apropos* of the note in the issue for December 21st, 1893, page 554, the following clipping from a daily paper may be worth reproducing—"A journey from Birmingham to Stratford during the summer months is enlivened by a succession of very creditable floral displays, and many are the comments of the public as to the artistic effect attained by the station-masters. Doubtless this has been the cause of some surprise as to why this pleasant rivalry exists, but the Great Western Company have, since the year 1877, given prizes for the best gardens throughout their line to the extent of £250 annually. Last year (1893) the premier garden in the Birmingham Division was voted to be Wilmcote on the Stratford Branch; Knowle, which on several previous occasions had won the special prize, coming second. Prizes of considerable value have also been awarded to Claverdon, Long Marston, Aynho, Milcote, Hatton, Somerton, in the out-country district of the Birmingham division, and, what is more gratifying, some of the stations in the Black Country have vied with their compeers in the country districts, and have been successful in gaining prizes, notably Soho, West Bromwich, Daisy Bank, Great Bridge, Bilston, and Lye."



LÆLIO-CATTLEYA NYSA.

THIS beautiful bigeneric hybrid was raised by Messrs. J. Veitch and Sons, Royal Exotic Nursery, Chelsea, and was exhibited on several occasions last year. It is the result of a cross between *Lælia crispa* and *Cattleya Warscewiczii*, the latter being the pollen parent. The sepals and petals are rosy mauve, while the lip is large and of a rich purplish crimson hue, the throat being pale yellow. It is a beautiful flower when seen at its best, and usually attracts attention. The engraving (fig. 5) has been prepared from a bloom exhibited by



FIG. 5.—LÆLIO-CATTLEYA NYSA.

Baron Schröder, The Dell, Egham, at the meeting of the Royal Horticultural Society on December 12th, 1893, and for which a first-class certificate was awarded.

ORCHID LESSONS FOR YOUNG GARDENERS.

ROOTS AND THEIR REQUIREMENTS.

(Continued from page 573 last vol.)

HAVING considered the peculiarities of Orchid roots we may next proceed to briefly describe what is needed as a soil or substitute. As regards epiphytal Orchids, this acts chiefly as a medium for the retention of moisture, and the more durable the substance employed the more valuable it is for the purpose in view. A little support is derived from it, no doubt, but it is extremely small compared with that yielded by the soils used for the majority of plants grown in pots. We have an example of this in the fact that many Orchids need nothing but moss about their roots, and some

will even exist without that, and thrive better upon bare blocks of wood than in any other way, as will be indicated later on.

No substance has yet been found to equal good peat for such epiphytal Orchids as are most conveniently grown in pots, pans, or baskets, and a few words must be devoted to a consideration of this material. Peat differs greatly in character and composition. It can be used for a variety of purposes, but as it must be selected with care for the plants we are dealing with in these notes, it may be well to review its origin, qualities, and uses. Wherever we find a low vegetation which produces an annual vigorous growth from perennial fibrous roots, there is the approach to the formation of a substance analogous to peat, which consists of a netted mass of roots with a proportion of humus derived from decayed leaves or stems more or less completely reduced. For cultural purposes, therefore, peat can be divided into three classes: first, Orchid peat, consisting of durable fibre with but little decayed substance; secondly, Fern peat, comprising less lasting fibre and more humus;

thirdly, bog or heath peat, which is formed of fine roots and a proportion of much-reduced humus, often having the appearance of a fine black soil, and with the addition of sand. These are adapted for very widely differing plants, from the rapidly growing, soft-textured inhabitants of tropical regions to the slow-growing, hard-wooded natives of more temperate regions, such as the Heath and Azalea family, and it is obvious that in selecting peat we must keep the kind of plants we are about to place in it distinctly in view.

It is a frequent error to regard peat as of a uniform character, whereas, even with that suitable for Orchids, the difference in quality and value is surprising, and the large dealers find no mean difficulty in securing a constant and reliable supply. The best Orchid peat is found where the common Bracken flourishes, and is practically formed of the rhizomes and roots of this Fern. It is always, therefore, near the surface, and rarely extends to a

greater depth than 2 feet, so the supply is necessarily limited; for it would be difficult to estimate how long these beds have taken to form, and unfortunately in some cases large extents have been destroyed by firing the drying fronds in autumn or winter, for it would smoulder until useless. Some of the largest supplies of excellent peat have been for some time obtained from Hampshire, especially in the Ringwood district, where two dealers (both regular advertisers in this Journal) have their depôts—namely, Messrs. Epps & Co. and Mr. G. H. Richards. I have dealt with these firms, and have no preference, for both are trustworthy. There is a great demand for the best Orchid peat, and many estate owners may possess miniature gold mines in this way, of which they are quite unaware, and it is worth anyone's while to endeavour to discover fresh supplies of saleable material when soil produce is at such a discount.—ORCHIDIST.

(To be continued.)



INCURVED JAPANESE CHRYSANTHEMUMS.

IN reply to "Beginner" (page 6), he will notice I did not answer his first note until I was quite satisfied he had wrongfully accused the winner of the first-prize stand exhibiting unfairly. "Beginner" had not then written to say he had made a mistake. If Léon Frache and Mdlle. Marie Hoste were included in either of the prizewinning stands we must have overlooked them, and I very much regret that the mistake was made, but of course we are quite as liable to make mistakes as "Beginner." For the future I would advise your correspondent to carefully look through the competing stands, and if not showing according to schedule enter a protest before the judging is finished, also before rushing into print to be more careful not to accuse any one exhibitor; the mistake, if any was made, would then be more promptly cleared up.—EDWIN BECKETT.

JUDGES AND JUDGING.

I HAVE been very much interested in reading the opinions of your various correspondents on the above subject. I am in full accord with Mr. E. Molyneux (page 529, last vol.) when he says, "The adjudicators should be in a position to give a reason for their decision;" but how seldom is this the case in rural shows—perhaps once in twenty times. Then again, if the judges are in a position to give a reason for their decision, and you ask them civilly to point out to you the difference, they either refuse to do it, or are very reluctant about the matter, and particularly if the questioner be an amateur or a young man who is desirous of improving himself. For many years I have advocated that after the awards are made at a show, the judges, exhibitors, and committee meet together in conference, where the judges should be called upon to give an account of their stewardship. This method would minimise to a great extent the dissatisfaction of exhibitors. As an alternative to the above I should suggest that the class cards have, in addition to the exhibitor's number, the qualities of the various products in their respective classes printed, with space provided for points. By this means we should gain a twofold object. In the first place we should satisfy the exhibitors, in the second place we should impart educational matter to visitors.—S. H.

JUDGING AT THE EDINBURGH SHOW.

AS one greatly interested in the discussion in the *Journal of Horticulture* I should like to bring a few facts before your readers bearing on the case, from I hope an entirely impartial point of view. In the first place the judges were men drawn from a wide area, nearly 100 miles apart, so absolute strangers to each other, occupying the positions of head gardeners in some of the best appointed gardens in the country, where the collections of Chrysanthemums have been famous for many years. Two of them acted as judges at several International Exhibitions held in Edinburgh, Glasgow, and most of the important shows held in different parts of the country for several years. Their decisions always gave great satisfaction, and even at this past show with this one exception.

In looking over the Show they appeared to favour blooms with decided bright colours of rounded high build of moderate size; varieties difficult to get up seemed to tell with them if they were good specimens of their kind. This appeared to be the outstanding features of the first and second prize stands in the cup competition. The third and fourth prize stands consisted of much larger blooms of greater width, but rougher in outline and very dull colours. A few seemed to consider that these two stands should have been placed higher in the prize list on account of the size of the blooms; but it was only the opinion of those who were not educated up to the idea that size alone does not constitute a meritorious bloom. This system of judging has been advocated by all the leading horticultural papers as well as the best

judges in the south. The judges at Edinburgh are certainly to be congratulated upon the very decided step they took in this direction, and I shall expect to find blooms of more refinement staged next time; but since your adverse criticism on the judges nobody knows hardly what to accept as to the correct system.

The Committee have still some explanation to give anent not entertaining the protest, to some extent at least, or what was the reason that the cup was not presented to the winner on the platform at the opening of the show as this had always been done hitherto? "The expert" is a well known trade grower, but whose figures go to prove very little, as the blooms had been staged for nearly forty-eight hours before he pointed them, and after several thousand people had attended the Exhibition, causing dust to rise and fall and dull the bright colours of the blooms. The expert pointed the third prize stand very high in comparison with the others.

I would advise the persons who entered their protest in this case, as well as others who may find themselves defeated competitors at some future time, to refrain from rushing into print and exposing their grievances, for it serves no good purpose. They should learn to accept their defeat with good grace.—ROBERT WOOD, Carnoustie.

DECORATIVE BRITISH FERNS.

THE HARTS-TONGUE.

(Continued from page 7.)

THE common Harts-tongue Fern (*Scolopendrium vulgare*), though it contributes so largely to the vegetation of many of our British counties, lining the hedges and dotting the walls with myriads of its long strap-shaped fronds, is yet a member of an extremely small family which is only distinguished botanically from the Spleenworts (*Asplenium*) by its long lines of spore heaps being invariably formed of twin sori, or two lines instead of one, the twin crops of spores coalescing as they develop into one uniform sausage-shaped mass. The kinship of the species is best seen in the exotic Bird's-nest Fern (*Asp. nidus avis*), whose broad, erect, simple fronds are exactly like gigantic Harts-tongues, to which the long lines of the spore heaps give an additional resemblance. The Harts-tongue is one of the few Ferns which adapt themselves both to growth in deep soil and at same time are quite at home in the dry chinks of walls and rocks, where its relatives, the Spleenworts, are also in their element. It is curious to note that in secluded damp places, where the air is always humid, its fronds will assume very vigorous and healthy growth, and a lump of it may be a couple of feet, though the roots may be of the scantiest, and only sufficient to anchor the crown to the surface. On the other hand we may find it revelling in the hedge bottoms in ample leaf mould and with yard-long fronds or nestling in the chinks of a dry wall as tough little specimens only an inch or so across. It will be noted, however, that all these situations imply thorough drainage, a point not to be forgotten in pot culture. It is to the peculiar appearance of the lines of spore heaps with which a frond may be striped at the back from top to bottom with a hundred or more, that the botanical name of *Scolopendrium* (from *Scolopendra*, a centipede) is derived. It is the only British Fern with perfectly plain, undivided fronds, and hence cannot be mistaken for any other.

From the decorative point of view even the common form makes a fine handsome ornament when well grown, but although the simple strap would seem to afford scanty material for varietal divergence, it is a curious fact that hundreds of distinct varieties have been evolved from it, many of which indubitably far surpass the normal in beauty. So prolific, indeed, has it been in this direction, that a collection of Harts-tongues alone would demand a very large space, and be of inexhaustible interest to the owner.

Decidually the most ornate forms are those belonging to the frilled or "crispum" section, of which the ordinary type is well known. This is the form which the "plumose" or extra feathery variation in the divided species takes in this, the abnormal development of the leafy part of the frond taking the shape perforce of a more or less dense frill, this frill in some of the best forms being moreover fringed or finely lacerated on its edges. As in plumose forms generally, e.g., *Polypodium cambricum* or the Welsh Polypody, no spores are produced, and the extra feathery or frilled character appears to arise from their suppression, the reproductive vigour being transmitted into leaf-forming energy. Considering this barrenness, which in all the true crispums is thorough, it is a singular fact that in some parts of the country, Monmouthshire especially, a great number of independent finds of crispum have been recorded, Col. A. M. Jones of Clifton finding no less than twenty-nine isolated plants in one lane. We must thus believe that some of the common plants in certain localities yield spores which in their turn produce barren, and therefore frilled plants, since it is clear that each find must be an independent sport. Some forms of crispum have been found which are partially fertile, but they yield fertile progeny, and are, as we have indicated, not considered to be "true," their plumose character suffering through their fertility to an appreciable extent. The best known varieties of crispum are *S. v. crispum grande*, *Wills*, which in our own collection bears fronds 5½ inches across, i.e., more than double the ordinary width. *S. v. c. fimbriatum*, *Stansfield*, is a gem with a finely fimbriated edge, of which a crested form has been raised by Mr. Cropper. The Fern is, however, manifestly taxed to its utmost to produce a deep frill, and hence when a crest is formed it is at the expense of the primary or frilled character. *S. v. c. majus*, *Moses*, *S. v. c. Kitonæ* (a crested form), and *S. v. c. capi-*

tatum, *Jones* (also crested), are the next finest, and being all distinct, form a splendid group when well grown.

In any Fern district, where the Harts-tongue prevails, it will need very little search to discover here and there in the hedgerows or on the walls plants in which the tips of some of the fronds are more or less forked, and it will be strange if a little more perseverance will not yield a plant of this sort which is true, *i.e.*, in which all the fronds are so characterised. In this case a find of *S. v. lobatum* may be scheduled. Extended search will, however, reveal the fact that the plant is capable of bearing heavy tassels of countless divisions, and one of my happiest discoveries (*S. v. corymbiferum*, *Drury*) was found when investigating a huge plant of lobatum which was poking its great forked fronds most obtrusively through a hedge near Sidmouth. Opening the hedge to get a good look at this plant we found a round bunch of apparent moss bobbing against my nose, and this I discovered was at the tip of a frond of an independent plant, all five fronds of which were similarly characterised, though all the rest were hidden by the lobatum in question. This was one of those unexpected hits which now and then fall to the lot of the Fern hunter. In this the frond is normal to within an inch or so of the tip, the midrib then thickens and divides into infinite ramifications, forming quite moss-like balls. Of this tasselled section the name is legion, and we can only specify a few of the best. To take first those with branched and crested fronds, *S. v. ramo-cristatum*, *ramo-digitatum*, *keratoides*, *ramo-cristulatum*, *constellatum*, *unguiceps*, and *ramo-marginatum*, *Clapham*, are the best of this type, the last especially forming highly decorative plants when well grown. The best with single or unbranched fronds bearing tassels at their tips of varying character are *S. v. cristatum*, *cristatum*, *Barrard* (a very neat new find), *corymbiferum*, *coronatum*, *capitatum*, *cristulatum*, *flabellatum*, *grandiceps*, *Cousens*, *nudicaule capitatum*, and *crista-galli*. The extreme forms of cresting are termed conglomerate, the whole frond being repeatedly divided from the very base. To this section belong the well known varieties *Kelwayi*, *Coolingi*, and *Baxteri*, which are almost if not quite identical. These have the peculiar faculty of throwing young plants from bulbils on their edges, and from one of these was raised conglomeratum densum, *Kelway*, in which the whole plant is a small dense absolutely moss-like mass, not unlike *Selaginella apoda*. *S. v. Cousensi* is a denser form *à la* *Kelwayi*, and *Wardi* is of same tribe.

The base of the normal Harts-tongue frond is cordate or heart-shaped, consisting of two rounded lobes. In some of the varieties these lobes are considerably lengthened, and even tasselled, forming what is termed the sagittate or arrow-shaped section. The old variety, known as *laceratum* or *endivæfolium*, is a good example, the rough outline of the frond being a triangle, each point of which is formed out into a tassel. In this form, too, the edges of the frond are deeply cut into long segments, an obvious attempt in the species to assume the pinnate or feathery character of its *confrères*. *S. v. sagittato-projectum*, *Westropp*, and *S. v. sagittato-projectum*, *Selater*, are bolder growing Ferns of like character. *Sagittato-cristatum*, *Dodds*, is a small variety without side lobes, but with more pronounced trifoliation. *S. v. cristato-viviparum*, *O'Kelly*, is another small form with enlarged basal lobes, but is singular in its capacity for forming bunches of young plants on its upper surface. *S. v. Hankeyi* is a grand sagittate variety, and so is Mr. Moly's *sagittato-projectum*.

In the bulk of those named the character of the frond is only altered by extension of its parts, but there are several sections in which the smooth surface, upper or under, is affected as well. *S. v. marginatum*, for instance, which has afforded a good quota of tasselled forms, has its under surface longitudinally ribbed between the midrib and the edges, a distinct ridge running down each side. In *S. v. supralineatum* we have these ridges on the upper surface instead. In some forms the frond is contracted and narrow, with the whole surface wrinkled and roughened. *S. v. muricatum*, *S. v. rugosum*, and *S. v. sculpturatum*, to wit, or, as in *S. v. pappillosum*, a line of warty projections may exist. In some plants several characters are combined, and they may be dwarfed as well, so that the changes are rung *ad infinitum*. Nor must we forget the peculiar periferous sports in which the fronds may be long or short, but ends abruptly with a pouch either at the back or the front of the frond, the midrib projecting for some distance therefrom like a Thorn. I have in my possession a variety of this in which the basal lobes have also pouches, breeches pockets as it were. In another direction there are the variegated forms, both yellow and white, but much remains to be done with these by selective culture before we can boast of a really beautiful one. The possibility is, however, manifest, and it remains for our hybridisers to persevere until they attain it.

This brings us to possibly the most interesting group of all—*viz.*, those remarkable mixed forms which Mr. E. J. Lowe has exhibited of late years at the various British Fern exhibitions held under the auspices of the Royal Horticultural Society in London. In these it is manifest that he has managed to cross several marked forms together so as to combine in one plant the salient characteristics of, it may be, half a dozen. He takes, for instance, *S. v. spirale*, a dwarf plant like a bunch of fat corkscrews, *S. v. muricatum*, a plant with roughened fronds, an undulate or wavy variety, a crested variety, and a variegated form, sows these spores thickly together, and eventually pricks out from the crop plants of all sorts, some with two characters combined, some with three, and now and again one embodying the whole. The plants have been in evidence beyond a doubt, but so far it has been impossible to make the scientific biologist swallow such a pill as the mixed parentage constitutes, assuming the maximum results to be produced by a single crossing—

i.e., in one generation. For a long time the capacity of Ferns for crossing at all was doubted, but now it is a well recognised possibility and systematically acted upon, but it is generally assumed that to obtain plants of more characters than two parental ones, a second crossing between the compound parents must be effected, when four might be expected, and so on; and of course, clear as is the evidence afforded by Mr. Lowe's exhibits, it is impossible when once there are innumerable crossed plants in a collection, to eliminate the chance of stray spores from these effecting results which the register would not lead one to expect.

The Lake District has afforded a very fair quota of good varieties, seventy-four being recorded in "The Ferns of the Lake District," edited by the late Mr. Baines, no less than 214 figure in Mr. E. J. Lowe's lists as wild finds out of a total of 450 described, this being by far the largest number of distinct forms yielded by any known Fern, though I venture to assert that were a common Harts-tongue frond handed to the more versatile decorative artist existing with a commission to invent a hundred variations of that simple theme, he would find himself non-plussed halfway through his task.—CHAS. T. DRURY, F.L.S., F.R.H.S.

(To be continued.)

RASPBERRY JOTTINGS.

I HAVE no doubt the pleasant jottings from "W. P. W." (page 571 last vol.) proved very interesting to all fruit growers. Probably the phenomenal weather caused some people to indulge in the abnormal figure of £40 per ton. I would very much like to know any grower who obtained anything like such a figure. I know some growers in Kent who did not realise more than £20 per ton, and if they add the light crop to this, it will be seen at once the Raspberry crop of 1893 was barely remunerative. Many growers will probably be glad to have particulars of any Raspberry likely to supersede Carter's Prolific. I have never met with Dr. Maclean, but it appears to be an old variety. I see Mr. J. Fraser of the Lea Bridge Nurseries catalogues it, though it does not figure in the "Fruit Manual," neither do many fruit nurserymen appear to grow it. I shall be looking out for information respecting it, for though at present I am of the same opinion as the Kentish growers, "There's nothing like Prolific," I shall be pleased to make the acquaintance of a better variety.

I suppose it is almost out of the question for market growers to adopt the tall-growing varieties on any large scale; but I am under the impression where a tall variety, such as Rivers' Hornet, could be grown to wires in lines 5 feet asunder, it could not fail to prove remunerative. The cost of wire at the present day is a very small item, while the posts could be made of rough pieces of oak. The labour in fixing would not be great, for, providing the posts are dipped in tar, they will last almost as long as the crop of Raspberries, which should be ten years at the outside. I notice "W. P. W." mentions my initials in reference to Rivers' Hornet. I first saw it growing at Sawbridgeworth some years ago. I was told it was a French Raspberry, and would make a good one. So it has turned out. The grower mentioned by "W. P. W." sends me particulars of his last year's crop, which I find works out at 2 lbs. to the yard run. This, too, in a bad season, with a light soil resting on gravel, and no mulching. In an ordinary season it must be conceded, this would be greatly surpassed without the least difficulty. The fruits individually are very fine, and always command a ready sale. The surplus canes are sold each season to other growers in the neighbourhood, and I daresay help to swell the margin on the right side. My friend finds the Raspberry crop the most remunerative of his fruit crops. I am confident if private gardeners were acquainted with the merits of this variety, they would give it a trial. It has a very vigorous constitution and crops well.

It will be a matter of surprise to many readers to know the barbarous practice of digging between the rows of canes is not yet obsolete. I was under the impression it was till I saw a case a few weeks back. I very mildly suggested the roots would be much better were the autumn digging discarded, but was informed they always had good crops of Raspberries, so there was no necessity to alter their system. It appears so palpably plain the roots get destroyed by such a method of procedure, that one can only marvel to see it being accomplished.—J. R. B.

COFFEE IN MEXICO.—The facilities offered by this country for the growing of Coffee, at present one of the most profitable of tropical crops, are attracting much attention in the United States. A short time ago Americans took up for Coffee culture large tracts of land on the isthmus of Tehuantepec, and since then the enterprise has taken definite shape under the name of the Mexico Land and Improvement Company. Following the lead of this Company several private individuals have made purchases of Coffee lands in other parts of the State of Vera Cruz. Some of these investors, says a Mexican paper, have settled on their plantations in order personally to acquire a knowledge of the business of Coffee growing, while others have appointed agents to watch over their interests. As long as the price of Coffee rules high, the investment of American capital in Mexico Coffee lands is likely to continue. The unfavourable conditions of the labour market in Brazil and the unsettled state of affairs there generally, have furnished Mexico with her golden opportunity in the matter of Coffee production.



NATIONAL ROSE SOCIETY'S EXHIBITION AT WINDSOR.

THIS Exhibition, which will be held on June 27th, should prove a success, for the local Society is actively making the preliminary arrangements. The Queen has, we are informed, graciously promised to give a prize, to be offered in such class as the Executive may determine.

REIGATE ROSE ASSOCIATION AND COTTAGE GARDEN SOCIETY.

By the amalgamation of the Cottage Garden Society and Rose Association of this Surrey town it is hoped that a great South of England show will result. In the Rose schedule we observe that very good prizes are offered in open classes to growers of (A) any number of plants; (B) of not more than 2000; (C) not more than 1000; and (D) growers of not more than 500 plants. In the local classes prizes to growers of not more than 100, and more than fifty plants respectively. The Honorary Secretaries, Mr. William Wells and Mr. R. G. West, trust to receive adequate support to enable them to carry out their project successfully.

HYBRID TEAS.

I HAVE read with much interest the able criticisms of "W. R. Raillem" (page 559), and Mr. Grahame (page 577, last vol.), on the new section for Hybrid Teas in the National Rose Society catalogue, and thoroughly agree with the views expressed by them. The idea in forming this new section, so far, at least, as I understood it, was to bring in some beautiful hybrids such as Viscountess Folkestone, Grace Darling, and the like, which, from their strong infusion of Tea blood and similarity to the true Teas, were unfitted to be placed among the exhibition list of Hybrid Perpetuals; but why a Hybrid China like La France, and why a Rose like Captain Christy, which in its flower and foliage appears to show more Bourbon than Tea ancestry, should now be pitchforked out of the position they have held for many years among Hybrid Perpetuals into this new section, is beyond the understanding of anyone who has discussed the question with me during the past exhibition season.

With "W. R. Raillem" I accept my full share of responsibility for the mistake, whatever my individual action may have been, and echo his prophecy that the new classification is unlikely to be permanent.—E. B. LINDSELL.

CLIMBING TEA ROSES.

FOR culture under glass, whether in pots or planted into the side borders, few plants will produce a better and more certain crop of bloom than Tea Roses. With a few of the newer additions we now possess a grand assortment of colour, the varieties mentioned below being well suited for culture under glass.

Climbing Niphetos is a pure white, of extra strong growth, and remarkably free blooming. Reine Marie Henriette gives us a deep red flower of excellent quality; the buds are long, well shaped, and accompanied by handsome deep green foliage. This is a superior colour under glass; in this respect it forms an exception to the rule, as most Roses are considerably deeper in shade when grown in the open. Maréchal Niel needs little comment, as it is so well known as the best yellow Rose, even after thirty years' culture. However, it has a formidable rival in Climbing Perle des Jardins, a Rose of comparatively recent introduction. This is one of the most decided acquisitions of the present decade, when many grand Roses have been given to the public. It is a deep yellow of extraordinary strength. L'Idéal possesses a remarkably sweet perfume, as well as almost indescribable colours. Rose, carmine, copper, salmon, and orange are all blended more or less, some blooms having one of the above colours more pronounced than others. Not very double, but particularly free, and much more perpetual than most climbers. William Allen Richardson is of similar character except for colour. This is a deep orange and apricot, sometimes like a deep coloured yolk of an egg, varying from that to pale orange and lemon white. The variations are a remarkable feature in this grand Rose, and are unaccountable—a plant may carry all deep coloured blossoms during one crop, and almost all pale at the next, or both may be present. I have frequently had a large truss of some fifteen blooms in different stages and colours, the very deepest shades being borne by a bloom next to one almost pure white. It is like Maréchal Niel in its uncertainty of growth and liability to canker. Occasionally one meets with a plant which remains in a puny state for a long time, although its fellow, and under precisely the same treatment, develops into a grand specimen in every respect.

Madame Bérard has the reputation of being a shy bloomer under glass. My own plants are a complete denial of this, for they bloom from almost every eye throughout the length of 15 feet growths. This Rose requires its wood to be a little more matured than others, when it is the grandest of the apricot-buffs. Bouquet d'Or seems to be a deeper coloured Gloire de Dijon, and perhaps hardly so strong in growth. When I say it is an improvement upon Gloire de Dijon under glass there is need for no more. Madame Chauvry is a rich salmon-yellow, possessing a warm rosy yellow shade; a difficult Rose to describe, but quite distinct,

and exceedingly pretty. Lamarque was introduced upwards of sixty years ago, and is still the best lemon-white; too tender for any open position but a warm wall in the south when growing in the open air; it is a grand Rose under glass where numbers of blooms are wanted. Henriette de Beauveau is an 1887 Rose, and one of the best clear yellows we have. Grand form and size, free blooming, and very sweet scented. Comtesse de Bouchard was only introduced in 1890, and I have not seen enough of it to speak positively, but I think sufficiently high of this new variety to include it in my list. It is very large and full; a peculiar colour, yellow or lemon-white and saffron; most distinct.

The six best of the above are Maréchal Niel, Climbing Perle des Jardins, Climbing Niphetos, W. A. Richardson, Reine Marie Henriette, and L'Idéal. I am writing more particularly about Roses under glass, but with the exception of Lamarque and Climbing Niphetos it would be difficult to select better varieties for walls and fences in the open.

There is a decided advantage in having these climbers in pots when early forced blooms are required. They should be grown similarly to young Vines, one or two good rods being much better than a number of medium growths. December and January are two excellent months to commence operations, as we are in the midst of grafting. Seedling Briars established in small pots are the best stock, being closely followed by Briar cuttings, which may be potted at once, and then worked a few weeks later, or be grafted before potting. I like to have the roots of stocks partly established, and on the point of producing a good flow of sap. It is of greater importance than is generally recognised to have the stocks in the exact stage I will describe. They should not be sufficiently forward to receive a check to root action when cut down for receiving the graft, nor should they be quite dormant. Catch them when new roots are starting freely, and about a quarter of an inch long; no more. Where stocks are not available, portions of healthy Briar roots will do almost as well. There is a great advantage in the latter as regards probable suckers. It is well to secure the roots in suitable pieces, and to lay them in soil under cover for a couple of weeks before grafting, if they are to be worked previous to being potted up. They are more easy to handle thus, and if the rise of sap be encouraged in this way it is more nearly approaching that of the graft. The latter are much best when procured from plants under glass, and unless the roots and stocks are prepared in the manner indicated we get the sap of grafts a little more forward than that of the stock, whereas the contrary is far preferable.

When grafted they should be placed in a close case, having a gentle bottom heat; 65° is a good temperature. Grafting wax, moss, clay, or any other substance are not used by the majority of trade growers to keep air from the wound while a junction is being made, as healthy scions and stocks unite better without such aids. Some few are certain to grow in advance of the rest, and it is a good plan to remove them from the case when young growth of about 2 inches has formed. On no account must they receive any severe check, or strong rods of growth cannot be produced. Repot them when necessary, using a slightly richer compost each time. I do not care for them in larger than 6 to 7-inch pots during the first summer, as I find the wood matures better, and quite enough length can be obtained if the plants are treated generously. Frequent syringing and full exposure to sun, especially towards the latter part of the summer, are most essential. It is best to remove them to the open by the middle of July. My plan is to stand them on the south side of a hedge and half plunge the pots. The shoots are secured to the hedge by one or two stout pieces of string stretched from end to end. This keeps them from blowing down and being otherwise injured by wind. They also get plenty of air, partial shelter, and full exposure to sun. Here they remain until thoroughly ripened, a process which may be materially assisted by judicious watering.

Many persons object to repotting their Roses previous to forcing, believing that a greater profusion of bloom is secured by keeping the plants root-bound. My own experience is decidedly in favour of an additional shift into good soil after the plants have become matured and rested for a few weeks. Last year I potted all those I intend forcing about the middle of October. By doing this early the roots move steadily and strongly into new soil, being far different to those produced upon root-bound plants. This system also recommends itself to me for the following reasons. The compost in a 6-inch pot is necessarily much exhausted after having produced the strong rods we require, and is therefore incapable of carrying a heavy crop of blooms and foliage under the strain of early forcing. True, they can be aided by liquid stimulants, but even then it is a great tax upon the roots. Nor do the roots commence new growths until introduced to heat, while if fresh potted we get a natural and steady start that is greatly in favour of satisfactory breaks of new wood when taken under cover. It is of considerable importance to get the roots moving in this way, otherwise artificial heat causes the eyes to burst so rapidly that the whole of the sap in the wood is soon exhausted, and a check is experienced through the backwardness of the roots. We can have no better guide than Nature, and the roots of plants invariably start first under these conditions. A check to young growth, from whatever cause, is often the sole reason of an indifferent crop and much blind growth. Dryness at the root is a fruitful cause of this, and a root-bound plant dries very rapidly. When new growth is active, and the roots have permeated the fresh soil, liquid manures are beneficial and necessary. My plants are brought into heat in batches so as to keep a succession of bloom. On November 15th I cut blooms of climbing Perle des Jardins and L'Idéal from plants grafted last January and treated as I have described. This was my

earliest batch, and consisted of a few of the forwardest plants, which were potted early in September, and brought under cover by the end of the month. I trust I have made it sufficiently clear that none of the plants are moved from the 6-inch pots until the wood is thoroughly matured.—PRACTICE.

MEYENIA ERECTA.

THE Meyenias constitute a small genus which is closely allied to the Thunbergias, although the former are by no means so well known as the latter. The cultural requirements of the Meyenias are few. If a light, rich compost of fibrous loam, peat, leaf soil, and a small proportion of well-decayed manure be employed, and the plants grown in a brisk moist stove temperature, very little difficulty will be experienced in obtaining vigorous specimens that will flower satisfactorily. A position well exposed to light, and yet sufficiently shaded in hot sunny weather to prevent the foliage being scorched, or the colour of the flowers deteriorated, is beneficial, with abundant supplies of water to the roots and on the foliage while growth is active. The plants have sometimes a tendency to become rather straggling unless a little attention is given to pruning the too greatly extended or bare shoots; but this is a matter that is very easily accomplished. As regards increasing the stock, cuttings are readily obtained, and if judiciously selected usually strike readily in an ordinary propagating frame. The moderately firm wood should be chosen, as the tender extremities of the shoots are rather liable to damp.

One of the species of shrubby habit, *M. erecta*, is represented by the engraving (fig. 6). It is a handsome plant, with dark green leaves and trumpet-shaped flowers, the corollas of which have a pale yellow tube, a throat of a deeper yellow, and a rich purple limb. It is a really useful plant, as flowers are produced nearly all through the year, a quality which distinguishes it from the other forms.

BEURRÉ DIEL PEARS CRACKING.

IN reply to "R. P. R.'s" query (page 578, last volume), respecting the cracking of the fruits of this variety "in wet weather as well as dry," I may say that cracking is its prevailing characteristic on trees in the open ground, whether these are standards on the Pear, or bushes, pyramids, or cordons on the Quince. The cracking sometimes commences with the setting of the fruit, some of it falling discoloured and cracked when it is just formed. This happens in a dry and in a wet spring. At other times the fruit only shows discoloured depressed spots or patches until it is a quarter or more grown, and then cracking begins when it is about half swelled. This is attributed to a wet summer following a dry spring; but the cracking is, as a rule, most pronounced in the three-quarters-grown fruit towards the end of summer, and this is saddled on a droughty summer, followed by wet at its close.

A tree of this variety on the Pear, trained to the west wall of a building, and covering space 18 feet high by 2½ feet = 432 feet superficial, produces on an average thirty-six dozen blemishless fruits, few under 1 lb. in weight, and some have reached 29 ozs. each. These fruits bring a return of 1s. 6d. per dozen, clear of all expenses = £2 14s. per annum.

In comparison with this tree the doings of a standard on the Pear are remarkable. Though a giant in its way, and burdening itself year after year with loads of fruits, the crop is so pitted and cracked as to be rejected for stewing purposes. Both the tree against the wall and the standard tree grow in the same soil—a somewhat light gravelly loam overlying ferruginous gravels.

Bushes, pyramids, or cordons on the Quince usually produce a large percentage of cracked fruits in the open, where the soil is a moist rather strong loam, about 2 feet deep, and incumbent on a gravelly clay. Trees on the same stock and as cordons trained to a wall with an east, west, or south aspect, and not a stone's throw from the bushes and pyramids, produce large, clear-skinned, well-flavoured fruit. The seasons really make little difference as regards the cause of the disease, though there may be considerable variation in the effects. A wet season favours the tree's enemies more than its fruit, a dry summer abets the tree more than its plagues. This with special reference to cracking in Pears.

"R. P. R.'s" Beurré Diel Pears from a south wall were "of very good flavour." What does that mean? Pears free from cracking in the hottest and driest position in a garden? It signifies thoroughly ripened wood, sturdy blossoms, stout growths, and thick epidermal tissues. This in consequence of the warmth and dryness of the situation. The tree against a south wall has a great advantage as regards climate—a far more important factor in Pear growing than is generally credited. Of its value "R. P. R.'s" evidence is singularly convincing—Pears grown against a south wall do not crack, but those on bush trees "crack in wet weather as well as dry." Why? The wood is not thoroughly ripened, the blossoms are succulent, the growths soft, and the epidermal tissues are thin. This because it receives less heat and more moisture than a similar tree against a south wall. Relatively, the tree against a south wall has the advantages of a bush tree in the favouring climate of France, and is in a better condition for resisting invasions from

parasites than a bush tree in the open. This is a very important point—climate—in the cultivation of Pears, for in no other fruit is there so great divergence in the hardiness of varieties, and it is mainly upon selecting those suited to the environment that success or failure depends. Draining and soil sanitation greatly aid climate; lifting, root-pruning, and sound cultural practice render the culture of certain varieties feasible under disadvantageous circumstances, but the main point is the "fitness of things."

"R. P. R.'s" Beurré Diel Pears crack on bush trees because they have the epidermis destroyed in places, and the underlying and adjacent tissues more or less hardened by the abstraction of their cell contents. This is caused by the scale fungus (*Cladosporium dendriticum* var. *pyrinum*), which, no doubt, lives on the bush trees from year to year for reasons before given—the facilities they afford for its growth. Spraying with sulphate of copper solution, 4 ozs. to 6½ gallons of water, before the buds unfold, and syringing with sulphide of potassium, ½ oz. to a gallon of water, directly the fruit is set, and repeating twice at intervals of three weeks, is recommended as a preventive and curative



FIG. 6.—MEYENIA ERECTA.

of scale fungus. Lifting or root-pruning, with the addition of fresh soil, would aid the trees against the fungus, and is advised, but the better plan would be regrafting with a variety that succeeds in a similar situation.—G. ABBEY.

NOTES ON EUPHORBIAS.

I READ with interest the remarks which appeared on page 12 in reference to my recent article respecting the above plants. In regard to the two varieties of Euphorbia (*Poinsettia*) *pulcherrima* I quite agree with Mr. W. Strugnell, that where a mass of colour is required during the present month preference ought most certainly be given to the later variety. I have some thirty or forty plants in full beauty at the present time, forming an excellent succession to the earlier variety, which are now past their best; but it is not everyone that has the facilities for cultivating a sufficient number of plants for this purpose. Where practicable I would strongly recommend both varieties to be grown. My reasons for recommending the early variety in preference to the late one are twofold, for not only are the bracts produced with greater certainty and of a more even character, but they are also at their best during November and December, when the supply of flowers is limited.

With all due respect to Mr. Strugnell I must still adhere to my previous statement—viz., that of growing them in a cold house in preference to frames. In referring to the plants grown at Heywood Mr. Strugnell says, "A few plants were kept indoors throughout the summer, but the much greater length of stem obtained by this course of treatment does not bear out the advantages claimed by Mr. Parrant." No reference is made concerning the treatment the above plants received. I am confident that were the cultural details recommended in my previous article carried out the plants will be equally as sturdy as those grown in a cold frame.

I omitted to say in my previous notes that when the weather was

favourable the ventilators should be left open wide enough to cause a current of air to circulate in the house all night. I am well aware that it is a difficult matter to obtain a suitable house that may be devoted to their culture, but with a little judicious arrangement I feel confident that this difficulty may be surmounted.—G. PARRANT.

ABERPERGWM, SOUTH WALES.

THE "Vale of Neath" is one of the few Glamorganshire valleys that retains most of its primitive beauty and is not obscured by the smoke from the numerous collieries, iron or steel and tin works that abound in the valleys and hill sides of South Wales. Yet this charming valley is not totally free either. Works extending thereunto for a considerable distance at its lower end, and a few isolated collieries even in its upper and most beautiful part flourish, but, as though ashamed to exist among such surroundings, are carefully hidden as far as possible from view. We are only reminded of their existence by the large number of coal trucks full and waiting to be filled with their precious cargoes that occupy the Great Western Railway premises as we alight at the Glyn-Neath station.

Our visit was during the dry part of the summer, and though vegetation all around seemed to enjoy its usual luxuriance, the various watercourses—some of which form charming cascades—and even the river "Nedd" itself, with the exception of stagnant pools in its deeper parts, were quite dry. The canal only seemed totally unconcerned at the drought, and in its perennial sluggishness for once directly echoed the state of our own feelings on that exceedingly hot day. We cross the latter, and pass near to an old and quaint-looking church, which, from its appearance, must have the secrets of ages in its safe keeping, and immediately we are within the gardens that form the subject of our notes.

Here we find Mr. C. Foster literally "earning his bread by the sweat of his brow," and we start on a tour of inspection. Mr. Foster is young and an enthusiast, bent upon making his mark, and comes of a good gardening stock, consequently we set off with high expectations, and notwithstanding many drawbacks and obstacles, which need not here be enumerated, they have had to give way before the will and perseverance of our young friend. We were impressed with the fact that the department usually obtaining the least care and attention from young gardeners, the kitchen garden, was here perhaps even more cared for than others. Would that young men in the earlier stages of their training devote more attention to this branch of gardening. If they were to do so, they would meet with fewer reverses when called upon to meet the demands of the kitchen, perhaps with meagre resources, in establishments to which they may be appointed. When Mr. Foster was appointed gardener here a few years ago he found the kitchen garden in a most deplorable condition. Forest plants occupied a large portion, and weeds—well, the old adage is, "One year's seeding, seven years' weeding," but what about several years' seeding? "I shall manage it very well," was our guide's remark. "I keep the hoes going, and the hot dry weather will help;" and so it seemed to be, and the crops, too, seemed the better for the "hoes kept going." What Carrots and Parsnips, and what Peas, too, for such a dry season! Tomatoes on walls and borders were bearing loads of fine fruit, the first being gathered on the 17th June. Speaking of first fruit, it is worth noting that the earliest Apricots were gathered on walls here the last week in May. It should be stated, however, that the spot where they grew is a veritable suntrap.

It must be very many years since the stout Yew hedges in the garden were planted. How stately they look! and what an air of patronage they seem to assume side by side with commonplace crops! The principal entrance to the kitchen garden is between two of these massive hedges, with enough space, however, for good herbaceous borders on each side the path, which were wonderfully effective in their arrangement and variety. A feature in the gardens throughout is the wealth of old-fashioned Monthly, China, Cluster, and other Roses. Rustic pillars, arches, arbours, odd corners, chimneys, and all sorts of places are made charming by this garb of frequently despised objects; and a wall forming a terrace near the front of the hall itself was rendered singularly beautiful, clothed with the old Monthly from end to end and ablaze in bloom; indeed, Roses of all sections are seen at home here—the Teas as well as H.P.'s with the finest possible growths were carrying blooms indicative alike of rich soil and good treatment. *Yucca gloriosa* was conspicuously blooming, and Sweet Peas of an excellent strain demanded more than a casual glance in passing them.

The glass is neither extensive nor modern in style, but every structure was as full as the proverbial egg. A crop of Black Hamburgh Grapes was something to be justly proud of, particularly remembering the condition of house, border, and Vines not a very long time previous. Muscats, too, were good in another house, and in a stove near some capital Ferns, *Eucharis*, and various foliage and other plants were luxuriating, under the partial shade of a fine *Stephanotis*, which occupied the roof. Wonderfully fine *Achimenes* were blooming in dense masses, and only in 4-inch pots, in a cooler house, with very good Tuberous Begonias, and a stage full of Zonal Pelargoniums in 4-inch pots, carrying enormous trusses of bloom, were certainly extraordinary. The plants were rooted in the preceding autumn, and had made phenomenal growth in so short a period. Tomatoes were everywhere, indoors as well as out, and Melons, we were almost saying, were as plentiful. Certainly, there were enough of them, and not lacking in quality either, Blenheim Orange and Scarlet Invincible being most in evidence.

Hardy fruit, as in most places, was plentiful, and the wall fruit particularly fine. On one of the lawns a fine old Mulberry was fruiting freely, and Fig trees were loaded with good fruit. The Mulberry just mentioned is a very old specimen, and its branches had many years ago partly given way from the main stem, and resting themselves on the ground in a semi-detached state, took root again at the various points of contact, gaining fresh support, and adding new life to the worthy veteran. In the near distance are to be seen the Tulip Tree, Hemlock Spruce, and Copper Beech, of more than ordinary heights and dimensions; and further still extraordinary specimens of common Beech, Silver and common Fir, with here and there an *Arbutus*, no longer a shrub, but trees rejoicing in a girth of 9 and 10 feet. The park and adjoining meadows are well wooded, and the specimens in a most charming woodland behind the gardens are fine; whilst beneath them the wealth of native flora and Ferns that clothe the banks and the bogs on all hands, are of more than ordinary interest. Before concluding our notice of Aberpergwm we should inform our readers that it is the residence of W. S. Williams, Esq., a gentleman well known throughout the industrial centres of South Wales and the West of England. Leaving this romantic spot we proceed northwards, and soon forget romance and poetry in the spectacle and reality of coal tips and chimney stacks in the vicinity of the ever-grimy Merthyr Tydvil.—BRADWEN.

ROYAL HORTICULTURAL SOCIETY.

WE have received a copy of the "Arrangements for 1894," issued by the Royal Horticultural Society, and in addition to the customary periodical meetings, the dates of which were given on page 553 of the *Journal of Horticulture* for December 21st, several prominent features are noticeable. The annual Exhibition of the National Auricula and Primula Society will be held, in conjunction with the usual meeting, on April 24th. The Temple Show takes place on May 23rd, 24th, and 25th, and in connection with this the first Exhibition of the Southern Section of the Royal National Tulip Society will be held. The London Pansy and Violet Society's Exhibition is arranged for June 12th, and a special Rose Show will take place at the Drill Hall on June 26th. July 24th is the date fixed for the Exhibition of the National Carnation and Picotee Show, held in connection with the usual fortnightly meeting; and a Conference on Trees and Hardy Shrubs at Chiswick on September 25th, the details of which will be published in due course. An examination in Horticulture will be held on May 1st, and intending candidates can obtain further particulars from the Secretary, 117, Victoria Street, Westminster. We append the names and addresses of the members of the various Committees for the current year.

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Lynch, R. Irwin, A.L.S., Botanic Gardens, Cambridge.

Maxwell, W. H., Munches, Dalbeattie, N.B.

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 Salter, C. J., Woodhatch Gardens, Reigate.
 Selfe-Leonard, H., Hitherbury, Guildford.
 Stevens, Geo., St. John's Nursery, Putney.
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HARDY FRUIT GARDEN.

Outdoor Vine Culture.—Planted in favourable situations on south aspects in southern and south-western districts of England Vines often yield good crops. They require a gravelly or sandy calcareous soil thoroughly well drained, hence warm and friable. They do not succeed well outdoors in a strong rich soil, being liable in this case to produce coarse sappy wood instead of shoots of medium texture, which become hard and ripe, producing plump firm buds, the shoots from such invariably being fruitful.

Sites.—The most successful results are obtained from Vines on walls or gable ends of buildings having an uninterrupted frontage to the south or south-west, the greatest proportion of sunshine thus being easily secured, for without abundance, especially in the autumn, nut-browned ripened wood, so essential in Grape culture, cannot be obtained. Walls of any height, or gable ends of various shapes, may all be utilised, as Vines are amenable to various methods of training, the best being adopted which the conformity of the wall surface renders most applicable.

Preparation of the Soil.—A border 3 feet wide will be of sufficient width at first for the needs of a Vine on outside walls. If necessary it may be added to in after years, but the roots usually find nutriment enough by rambling at will, especially if the subsoil is of such a character that the roots find it fertile. A border of this width well prepared and broken up to the depth of 18 inches will prove a suitable rooting medium in which the Vines will establish themselves readily. This depth and width of soil may be kept fertile and sufficiently encouraging to the roots by annual top-dressings of manure and due supplies of water, liquid manure, soapsuds in summer, together with additions of substantial compost from time to time for the benefit of active surface roots. This will be the means of preventing the descent of the bulk of roots into cold poor subsoil. In preparing the soil do not use fresh manure. Turfy loam, light or heavy, according to the nature of the staple soil, intermixed with dry wood ashes and a handful of bone-meal in the immediate vicinity of the roots of each Vine when planting answers the best.

Planting.—Autumn is the best season for planting young canes, but it may be done in spring. Early in April is a suitable time. Strong plants in pots should be obtained now, pruning the rods down to about a foot in length, shorter if to be grown to single stems only. Defer the actual planting until the time named, plunging the pots either in the ground to be afterwards occupied by the Vines or in a bed of ashes. There will be nothing gained by planting earlier. The roots will be inactive until April. At that time the buds begin to swell, and the roots are ready for immediately taking hold of fresh material which they will do if carefully laid out between layers of fine, loamy, gritty soil.

Pruning and Training.—Close pruning is requisite the first season in order to obtain stout canes for furnishing the space. If only one stem is desired prune to two buds, and when these break rub off the weakest, allowing the other to extend; at the winter pruning shorten this to 3 feet. Should the cane be weak, shorten it closely again, a strong rod being produced the following year which may be left $4\frac{1}{2}$ feet in length when pruning in the winter. The next season only those buds situated about 15 inches apart alternately are allowed to remain, the shoots proceeding being duly stopped at the sixth joint or one joint beyond the fruit, laterals and sub-laterals suppressed at one joint. The leading shoot is continued, and shortened each winter to 3 feet until the desired height is reached. The side shoots are pruned to one bud if plump; if not, two or more are left. Single-stemmed Vines should be planted 3 feet apart. One Vine, however, may be induced to cover much more space by training two stems horizontally 18 inches from the ground, upright canes being carried from these at 2 feet apart, originating spurs not closer than a foot, 15 inches being better. The pruning of these are the same as for single stems. Another method of training, less formal, consists in laying in young rods wherever room can be found 18 inches apart, only shortening them at the winter pruning to firm ripe parts. A constant supply of young wood can thus be secured and trained in any direction, older portions being cut out to make room as necessary. Some of the shoots may be shortened to form spurs.

Varieties.—Black and White Cluster, Miller's Burgandy, Black Hamburgh, Chasselas Vibert, and Royal Muscadine are the best varieties of Grapes for outdoor culture.

Pruning Large Orchard Fruit Trees.—The removal of crowded branches, those that cross and interlace with others, small spray growing in the interior of trees, and dead portions of wood are the chief details necessary in keeping trees healthy and fruitful. Though thin disposal of the branches is very essential, severe thinning at one operation is not desirable, should the trees be exceptionally full of rank growth in consequence of previous years' neglect. A reasonable amount may, however, be taken out, each branch removed being cut close at its junction with another, which will prevent young shoots breaking strongly afterwards. Among a host of crowded branches there is invariably an amount of

dead shoots. These of course may be cut out. The access of air and light prevents wood dying if trees are otherwise healthy, and a free extension of the branches within moderate limits, so that the foliage can properly perform its functions, favours the production of sturdy fruit buds instead of a preponderance of wood growth. A little regulation yearly, especially in the autumn before the leaves fall, thinning out any obstructing branches then, serves generally to maintain large standard garden and orchard fruit trees in shapely form and prolific bearing.

FRUIT FORCING.

Vines.—*Early-forced Vines in Pots.*—When the fruit is set attention should be given to thinning, commencing as soon as the berries are fairly swelling, removing the smallest first, and allowing sufficient room for the berries left to swell to their full size without wedging or crushing each other, yet leaving enough to form a compact symmetrical bunch. As a rule, early-forced Vines require less thinning than mid-season crops, partly because the bunches are smaller, and mainly through the berries not attaining so large a size as under more favourable conditions. Water copiously with liquid manure, keeping the evaporation troughs charged with liquid—1 oz. guano to each gallon of water, dissolving the guano and straining before use. Where there are no evaporation troughs on the hot-water pipes, the floor and pit edges may be sprinkled with liquid manure in the afternoon. Encourage growth above the fruit, yet only as much as can have exposure to light. Surface dress the soil with short sweet manure, and when roots are freely emitted from the collar some turves may be placed on, round, and over the rims, extending a couple of inches on the inside and outside, so as to rest on the fermenting material. This should be pressed down and added to from time to time, so as to keep it level with the rims of the pots, but do not raise the temperature about the pots above 75°. When the roots are working freely in the top-dressing they will greedily absorb nourishment, which should be supplied by sprinkling a little of some approved fertiliser on the surface at intervals of a fortnight. Bone and blood manures have special value for Vines. The temperature should range from 65° to 70° at night, 70° to 75° by day, 80° to 85° from sun heat, admitting air from 75°, and closing early, so as to raise it to 85° or 90° with sun heat, damping surfaces at closing time or early in the afternoon. Syringing the Vines ought not to be practised, as there is always danger of the water leaving a deposit on the berries.

Early Houses.—These will now require care in ventilating, so as not to admit cold draughts of air, which cripples the foliage and produces rust on the berries. Disbud when the best shows for fruit are discernible in the points of growths, and tie the shoots down before their points touch the glass. In stopping, be guided by the space at command. If the distance between the rods does not admit of much extension beyond the bunch, stop one or two joints above it, always allowing space for one or two joints of lateral extension. But where there is room, stop three or four joints beyond the show of fruit, nipping off the points of the shoots when the leaf at the stopping joint is about the size of a penny, and the tendrils as they form. Extend the laterals so that an ample and even spread of growth will be insured, but do not crowd the trellis with more foliage than can be fully exposed to light. Remove all superfluous bunches, overcropping being the precursor of deficiency of colour, and some say of shanking in the Grapes. When the flowers open, maintain a night temperature of 70° to 75° when mild, about 5° less if severe weather prevail, but insure moderate humidity in the atmosphere. Where fermenting materials have been employed in the house, do not allow the heat to decline at this critical stage, but preserve a good heap of Oak, Beech, or Spanish Chesnut leaves and stable litter in the reserve ground, to admit of a supply being obtained as required to maintain the heat of that in the house with regularity.

Vineries Started at the New Year.—The inside border must be brought into a thoroughly moist condition by repeated waterings or liquid manure at a temperature about 10° warmer than that of the house. The liquid manure will enrich the soil, and its value will be seen later in the increased chlorophyll in the leaves and in the berries. This means good colour later on, but avoid making the soil sodden and sour by needless early waterings, as this only hinders root action and favours soft growths with their flabby leaves. A heap of fermenting material on the floor about 18 inches deep, turning a portion of it daily, is conducive to an even break and favours speedy growth. Where this cannot be secured sprinkle the floors and borders in the afternoon with liquid manure, the neat drainings of stables and cowhouses diluted with six times the quantity of water. This will in due course decompose and ammonia be liberated, which, being volatile, forms with the moisture also given off from the soil an ammonia-charged atmosphere highly conducive to rapid vegetation.

The outside borders should be amply protected against frost, for the roots cannot derive nor transmit nourishment from a frozen soil. If the roots of the Vines are entirely outside the border should have a good supply of fermenting material, and if this may not be owing to the scarcity of material, afford dry litter or fern or leaves, so as to modify in some measure the chilling tendency of cold rains or snow. Attend to the due protection of the stems, for if these become frozen it is likely the crop will be destroyed if not the Vines down to where frozen. Sprinkle the Vines two or three times a day in bright dry weather, occasionally only in dull. Maintain a night temperature of 50° to 55°, 60° to 65° by day, ventilating freely above 65°, and close at that point. The rod and canes of young Vines should be placed in a horizontal position or lower to secure the buds breaking with regularity.

Late Grapes.—These are best removed to a dry room, where they will keep quite as well or better as if left on the Vines. The bunches should be cut with as much wood as can be spared, and placed in bottles filled with rain water, with a few pieces of charcoal in each, which will render any organic matter innocuous. The bottles should be fixed in an inclined position, so as to admit of the bunches hanging clear of the sides, and they may be as far apart as not to allow the bunches to touch each other. Keep the temperature of the room at about 45°, examining the bunches occasionally for decayed berries, which should be carefully removed. The Vines should then be pruned after keeping cool for a day or two, dressing the cuts with French polish, patent knotting, or other approved preparation as a safeguard against bleeding; also thoroughly cleanse the house. Admit air freely in favourable weather, striving to give the Vines as long and complete rest as possible. If the borders are unsatisfactory lift the roots of the Vines, clear out the bad soil, rectify the drainage, and relay the roots in fresh sweet compost within 1 foot of the surface, and the fibry ones not deeper than 3 inches. Where the Vines are planted inside, and have inside and outside borders, the renovation may be accomplished without loss of crop by renewing the former one year and the latter the year following.

Figs.—*Early Forced Trees in Pots.*—The temperature should now, for trees started in November, be increased to 60° at night, and 65° by day by artificial means, 70° to 55° with sun heat, commencing to ventilate at 70°, closing at 75°, and if the temperature rise 5° to 10° it will be an advantage, provided it is due to sun heat. Avoid, however, a high temperature by artificial means, for it tends to attenuate and weaken the growths, and this is unfavourable to the first and second crops of fruit. The sturdier and shorter jointed the young shoots can be kept the greater will be the chances of a satisfactory early crop. Syringe the house and trees twice a day—in the morning, and again at closing time in bright weather; but when dull, sprinkle the floor, pit sides, and walls, as a saturated atmosphere at such times is unfavourable to a sturdy fruitful habit. As the fermenting material settles firmly about the pots add more fresh leaves, bringing them nearer to the rims, taking care that the heat about the pots does not exceed 70° to 75°. Water the trees as required with liquid manure, always before the soil becomes dry. Neglect of water for once only will cause the entire collapse of the first crop. Place some turves about 2 inches thick, grass side downwards, as already advised for "Vines in pots," filling the circular dish with rich compost. Sprinkle a little superphosphate on the turves, and surface dressing occasionally, and water the turves with liquid manure, so as to keep them moist. Stop the growth at the fifth leaf, especially if it is necessary for inducing a bushy habit, but avoid crowding the trees with growths and foliage that cannot receive plenty of light.

Planted-out Fig Trees to Ripen Fruit in May.—The house containing the planted-out trees for this purpose would be started at the new year, or if not, there should be no delay in setting the house to work. The border will need thoroughly moistening through, after which the surface may be covered about 2 inches thick with short manure. The roots will extend from the collar into this, especially if the mulch be rather thicker there; and if the border be narrow and shallow some turfy loam and old mortar rubbish may be mixed with the manure. This will favour surface rooting, and it will be still further accelerated and growth sustained, both in the wood and fruit, by sprinkling a good handful of the following mixture on each square yard every fortnight or three weeks:—Bone superphosphate four parts, powdered saltpetre two parts, ground gypsum one part, mix, and keep dry. The surfaces of the house and trees will require an occasional syringing, but avoid damping the trees in very dull weather, yet maintain a genial atmosphere by sprinkling available surfaces when they become dry. Maintain a night temperature of 50°, 55° from fire heat by day, and from 60° to 65° with sun heat, ventilating freely from that temperature and losing no opportunity of effecting a change of air daily.

THE BEE-KEEPER.

APIARIAN NOTES.

COMB FOUNDATION.

It is now thirty-two years since comb foundation was introduced from Germany to this country, and from that time, being the first to manufacture it, I have employed it in my hives extensively. There is no wonder then that I should be constantly appealed to regarding its use by so many bee-keepers. At one time I recommended full sheets of foundation in super and in the hive; but I have modified my views and practice. Then sugar in some places was as high as 8d. per lb., and inferior at 6d., now the very finest of sugar can be had from 2d. to 2½d. per lb. Although I recorded in these pages that it was most profitable to use full sheets in supers, I soon experienced that if delicate samples of honeycomb were to be produced, and our reputation for superior produce was to be maintained, full sheets would have to be abandoned, and for thirty years I have used narrow starters not more than half an inch broad, and will not use broader ones, even at the risk of getting much less honey. I have also modified my views a little in

some instances connected with the hive proper, and it is here most queries are concerned.

For the benefit of novices, I advise them to use comb foundation economically and profitably; certain conditions of bees, weather, and season, have to be taken into account. It is impossible to lay down one mode of management in its use without alternatives. For example, with the honey flow on, and having a large swarm of bees, I approve of having the frames of the hive filled with foundation. On the other hand, if the honey flow was not on, or the weather being inauspicious, or it being a swarm of driven bees at the end of the season, I approve of starters only, because in such cases sugar produces combs cheaper than comb foundation, with the advantage that eggs will not be destroyed but hatched into healthy bees, while drone comb, especially in the latter case, will not be built. In the case of nuclei and after swarms, a portion of what the bees can cover need only have full sheets for a time, until the cluster of bees outgrow the combs. If in the height of the honey season, try to prevent drone comb being built; circumstances encourage the bees to build drone comb, and not the inclination of the queen or the variety of bees. After the honey season is past, no normal hive of bees will build drone combs; therefore they may be encouraged to fill their hive by feeding, or by transferring filled frames from hives not intended for stocks to those that are.

A little study of the above matters will enable novices in a very short time to know when it is best to supply foundation or when to withhold it, the great object being to assist Nature, and to check superabundance of drone combs with the least possible outlay. Fruitless discussions have been engaged in regarding the advantages of giving comb foundation when the bees had wax secreted in their abdomens. Bees cannot secrete at one time as much wax as is necessary to fill the hive with combs. When they are prepared to build combs by having much wax secreted in the segments of their abdomen, it is all the more profitable to increase foundation; but, again, during the working and breeding season bees are always more or less secreting wax, as it is required not only for the building and sealing of honeycombs, as well as for brood combs. Some bees also employ much of it instead of propolis.—A LANARKSHIRE BEE-KEEPER.



* * All correspondence should be directed either to "THE EDITOR" or to "THE PUBLISHER." Letters addressed to Dr. Hogg or members of the staff often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post, and we do not undertake to return rejected communications.

Odontoglossum Insleayi leopardinum (Tom Jones).—This Orchid requires similar treatment to that usually accorded the other species named in your letter. It is not advisable to keep it in too high a temperature, and water must be judiciously applied during the winter.

The Mummy Pea (H. J. P.).—We are astonished that such absurd notions as you cite, about seeds never dying but flourishing irrespective of age, are not extinct. The Mummy Pea story is a myth. The wily Arabs impose on travellers by selling seeds falsely stated to have been obtained from ancient tombs, and find wonder-seeking customers for their wares.

Analysis of Vine (E. W.).—Ash in 100 parts, 2.62; potash, 27.88; soda, 8.96; magnesia, 6.61; lime, 36.26; phosphoric acid, 13.18; sulphuric acid, 2.70; silica, 0.88; iron, 2.12; chloride of soda, 1.39. This is of continental vineyards. Grapes: Potash, 63.14; soda, 0.40; magnesia, 3.97; lime, 9.05; iron, 0.06; phosphoric acid, 10.42; sulphuric acid, 5.61; silicic acid, 4.11; albuminoides, 0.7; mineral matter, 0.4.

Pickled Timber for Footpaths in Hothouses (W. L. B.).—The timber having been pickled in petroleum or tar refuse (bye-products) will continue to emit fumes injurious to vegetation for a considerable time, especially when the sun heat is powerful, and the damage done to the plants will be most pronounced when the houses are kept warm and close. If you take the racks outside, and wash them well with hot water and soap, the smell will in a great measure be subdued. Use 4 ozs. of softsoap to a gallon of water, scrub well, and rinse with boiling water. The black varnish would subdue the smell, but only temporarily.

Camellia Buds Falling (J. F. W.).—The buds may fall from a number of causes. One of the most common is dryness at the roots, but we do not think yours is a case of that kind, as the buds are perfectly plump, completely sound to their centres, and the cells in nowise devoid of nutrient matter or sap. Nor is there any trace whatever of disease. We think the buds are simply unable to expand from the compactness of the petals, which are so tight, especially at the apex of the buds, as to have the appearance of being glued together. The late Mr. W. Wright found that cutting off a small portion of the tips of the buds transversely, like taking the end off a cigar, had the effect of securing the expansion of the flowers, and this on trees which otherwise failed to open their buds, but cast them year after year. The experiment has been tried on other trees, and found to prevent the buds falling when partly swelled for expanding, and secure fine blooms. Try it on yours.

Planting Box Edging (A. B.).—Take up the Box, tear it into slips, and every one with a small root or two attached will grow, and if sufficient of these cannot be had, mix some without roots with the others. They should be 5 or 6 inches long, held in the hand and the tops trimmed level, the bottom also. Make the ground very firm and quite level, then stretch the line, keeping it firm with pegs, and take out a trench, the side next the line being perpendicular, arrange the slips in it close together and level, holding them in position with one hand while the soil is beaten firmly against them with the other, then fill in with the rake or spade, and tread the ground along both sides the row, which, when completed, may be 2 inches above the walk. If no rooted portions can be had it will be well to take off a number of rootless slips and lay them thickly and deeply in the ground in a position shaded from the sun in summer, and they will emit roots and be ready for planting in the autumn. Rooted portions may be planted now if the weather is favourable, or in spring, the earlier the better.

Growing Chrysanthemum Plants (Beginner).—Your proposed compost, although very different from the orthodox mixture, may yet answer, especially if by garden clay you mean some of the best of the soil taken from immediately below the surface in the kitchen garden. Strong clay or marl would not be fit to mix with the compost before it has been first well pulverised by exposure to frosts, and when it has broken up into fine particles one load of this would be ample for five loads of your non-retentive soil. Use soot and lime a little more freely, and substitute grit, if available, for silver sand. To every bushel of compost add a 6-inch potful of crushed bones, and all being well mixed and allowed to remain in a heap till wanted, you should have a fairly good compost. Instead of allowing the three shoots obtained from the first breaks to run up as proposed, continue to pinch back till the requisite number of shoots are obtained, the final stopping taking place late in June. The full number of strong growths being reserved, and the weakest cut out, place a tall stake to each and keep them properly trained. Only a single bloom should be allowed on each. All side shoots should be closely pinched, and the buds that cluster round the central bud also carefully removed, fairly large well formed and richly coloured blooms may then be expected. The requisite number of blooms could be had by allowing the three growths to extend as proposed, especially if the points are taken out in June, allowing the stem to branch naturally.

Poinsettia Leaves Falling (H. W.).—The leaves always turn yellow and drop off after the plants have been in beauty for some time; but the change and casting of the foliage is accelerated by the checks the plants have received by sudden changes of temperature or extreme dryness of the roots even if only for a few hours. If the plants to which you allude had been grown in a very warm house, and especially if the pots had been partly plunged in a hotbed, the journey to which they have been subjected is quite sufficient to cause the loss of foliage. Continue watering them regularly as long as the bracts remain fresh and bright, then gradually withhold water until the soil is quite dry. After a few weeks of rest the plants may be cut down, the growths being made into cuttings and inserted in sand, one joint below and one eye just above the surface. If the pots are placed in heat these cuttings will emit roots, and with good culture form fine plants during the season; cuttings of the young shoots (that are produced if the plants are not cut down) root freely if inserted when 3 inches long and placed in brisk moist heat and shaded so as to prevent flagging. The old cut-down plants, when they have made half an inch of fresh growth, should be shaken out of the pots and be repotted in fresh soil, and if properly treated they will produce large heads of brilliant bracts by next Christmas. Read the article on the culture of Poinsettias, published in our issue for December 21st, 1893.

Names of Fruits.—Notice.—We have pleasure in naming good typical fruits (when the names are discoverable) for the convenience of regular subscribers, who are the growers of such fruit, and not collectors of specimens from non-subscribers. This latter procedure is wholly irregular, and we trust that none of our readers will allow themselves to be made the mediums in infringing our rules. Special attention is directed to the following decision, the object of which is to discourage the growth of inferior and promote the culture of superior varieties. In consequence of the large number of worthless Apples and Pears sent to this office to be named, it has been decided to name only specimens and varieties of approved merit, and to reject the inferior, which are not worth sending or growing. The names and addresses of senders of fruit to be named must in all cases be enclosed with the specimens, whether letters referring to the fruit are sent by post or not. The names are not necessarily required for publication, initials sufficing for that. Only six specimens can be named at once, and any beyond that number cannot be preserved. They should be sent on the

first indication of change towards ripening. Dessert Pears cannot be named in a hard green state. (R. P. Stafford).—1, Easter Beurré; 2, Nec Plus Meuris; 3, Knight's Monarch; 4, Bergamotte Esperen.

Names of Plants.—We only undertake to name species of plants, not varieties that have originated from seed and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in firm boxes. Slightly damp moss, soft green grass or leaves form the best packing, dry wool the worst. Not more than six specimens can be named at once, and the numbers should be visible without untying the ligatures, it being often difficult to separate them when the paper is damp. (Tom Jones).—A Cymbidium, but the flower was too faded to identify the species. (H. F.).—Oncidium tigrinum. (P. T. M.).—The Date Palm, Phoenix dactylifera. (Amateur).—Tillandsia Lindenii. (Herts).—1, Selaginella apus; 2, S. Kraussiana; 3, S. Kraussiana variegata. (Young Gardener).—Meyenia erecta; see illustration and description in the current issue.

TRADE CATALOGUES RECEIVED.

P. Barr & Son, 12, King Street, Covent Garden, London.—*Vegetable and Flower Seeds.*

H. Cannell & Sons, Swanley, Kent.—*Perfect Golden Seeds.*

J. Cheal & Sons, Lowfield Nursery, Crawley, Sussex.—*Garden Seeds and Garden Sundries.*

Dicksons & Co., 1, Waterloo Place, Edinburgh.—*Garden Seeds.*

Fisher, Son, & Sibray.—*Kitchen Garden and Flower Seeds.*

J. B. Riding, Chingford, Essex.—*Chrysanthemums.*

Arthur Robinson, Bishopsgate Street Without, E.C.—*Seed Catalogue and Garden Guide.*

B. Soddy, 243, Walworth Road, S.E.—*Spring Catalogue.*

T. S. Ware, Hale Farm Nurseries.—*Chrysanthemums, Flower and Vegetable Seeds, Begonias, and Lilies.*

COVENT GARDEN MARKET.—JANUARY 10TH.

FRUIT.

THE past frost has not improved our Market, business being exceptionally dull.

unit.			s.	d.	s.	d.				d.	s.	d.			
Apples, per bushel	..	..	2	6	to	9	0	Peaches, per doz.	..	..	0	0	to	0	0
Cobs	..	..	..	40	0	42	6	Plums, per half sieve	..	..	0	0	0	0	0
Grapes per lb.	..	..	..	0	6	2	0	St. Michael Pines, each	..	..	2	0	6	0	0
Lemons, case	..	..	..	10	0	15	0								

VEGETABLES.

	s.	d.	s.	d.		s.	d.	s.	d.		
Beans, Kidney, per lb.	1	0	to	1	6	Mustard and Cress, punnet	0	2	to	0	0
Beet, Red, dozen	1	0	0	0	Onions, bushel	3	6	4	0		
Carrots, bunch	0	4	0	6	Parsley, dozen bunches	2	0	3	0		
Cauliflowers, dozen	2	0	3	0	Parsnips, dozen	1	0	0	6		
Celery, bundle	1	0	1	3	Potatoes, per cwt.	2	0	4	6		
Coleworts, dozen bunches	2	0	4	0	Salsify, bundle	1	0	1	5		
Cucumbers, dozen	2	0	4	0	Scorzoneria, bundle	1	6	0	0		
Endive, dozen	1	3	1	6	Seakale, per basket	1	6	1	9		
Herbs, bunch	0	3	0	0	Shallots, per lb.	0	3	0	0		
Leeks, bunch	0	2	0	0	Spinach, bushel	8	0	0	0		
Lettuce, dozen	0	9	1	0	Tomatoes, per lb.	0	3	0	7		
Mushrooms, punnet	0	9	1	0	Turnips, bunch	0	4	0	6		

AVERAGE WHOLESALE PRICES.—OUT FLOWERS.

Orchid Blooms in variety.										
	s.	d.	s.	d.		s.	d.	s.	d.	
Arum Lilies, 12 blooms ..	4	0	to	6	0	Orchids, per dozen blooms	3	0	to 12	0
Azalea, dozen sprays ..	0	9	1	0	Pelargoniums, 12 bunches	6	0	12	0	
Bouvardias, bunch	0	6	1	0	Pelargoniums, scarlet, doz.					
Camellias, dozen blooms ..	0	9	2	0	bunches	4	0	9	0	
Carnations, 12 blooms ..	2	0	4	0	Poinsettia, doz. blooms ..	4	0	8	0	
Chrysanthemums, dozen					Primula (double), dozen					
bunches	2	0	6	0	sprays	0	6	1	0	
Chrysanthemums, dozen					Pyrethrum, dozen bunches	2	0	4	0	
blooms	1	0	4	0	Roses (indoor), dozen ..	1	0	2	0	
Eucharis, dozen	4	0	6	0	„ Tea, white, dozen ..	1	0	3	0	
Gardenias, per dozen ..	4	0	6	0	„ Yellow, dozen	2	0	4	0	
Hyacinths, dozen spikes ..	3	0	5	0	Roses, Safrano (French),					
Hyacinth, Roman, dozen					per dozen	1	6	3	0	
sprays	0	6	0	9	Roses, Safrano (French),					
Lilac (French) per bunch	3	6	6	0	per 100	6	0	10	0	
Lilies of the Valley, dozen					Roses, Safrano (English),					
sprays	0	9	2	0	per dozen	2	0	3	0	
Lilium longiflorum, per					Roses, Maréchal Neil, per					
dozen	6	0	12	0	dozen	3	0	6	0	
Maidenhair Fern, dozen					Tuberose, 12 blooms ..	0	4	0	6	
bunches	4	0	6	0	Tulips, dozen blooms ..	0	9	2	0	
Marguerites, 12 bunches ..	2	0	4	0	Violets, Parme (French),					
Mignonette, 12 bunches ..	3	0	6	0	per bunch	3	0	5	0	
Narciss, Yellow (French),					Violets, Ozar (French), per					
dozen bunches	2	0	4	0	bunch	2	6	3	0	
Narciss, White (French),					Violets (English), dozen					
dozen bunches	2	0	4	0	bunches	1	6	2	0	

PLANTS IN POTS.

	s.	d.	s.	d.		s.	d.	s.	d.		
Arbor Vitæ (golden) dozen	6	0	to	12	0	Foliage plants, var., each..	2	0	to	10	0
Aspidistra, per dozen ..	18	0	36	0	Hyacinths, per dozen ..	6	0	9	0		
Aspidistra, specimen plant	5	0	10	6	Hyacinth, Roman, dozen						
Azaleas, per dozen	24	0	42	0	pots	9	0	12	0		
Chrysanthemums, per doz.	4	0	9	0	Lilium Harrissi, per dozen	12	0	24	0		
Dracæna terminalis, per					Lycopodiums, per dozen ..	3	0	4	0		
dozen	18	0	42	0	Marguerite Daisy, dozen ..	6	0	12	0		
Dracæna viridis, dozen ..	9	0	24	0	Mignonette, per doz. . .	6	0	9	0		
Ericas, per dozen	9	0	24	0	Myrtles, dozen	6	0	9	0		
Euonymus, var., dozen ..	6	0	18	0	Palms, in var., each	1	0	15	0		
Evergreens, in var., dozen	6	0	24	0	„ (specimens)	21	0	63	0		
Ferns, in variety, dozen ..	4	0	18	0	Poinsettia, per dozen. . .	12	0	15	0		
Ferns (small) per hundred	4	0	6	0	Solanums, per dozen ..	9	0	12	0		
Ficus elastica, each	1	0	7	6	Tulips, per dozen	6	0	9	0		



PIGS AND BACON.

Pig management at a home farm is altogether a matter of expediency, dependent upon the size of the farm as well as upon household requirements. If the family is in residence during the winter, porkers of 50 lbs. or 60 lbs. weight will be required for a supply of fresh pork which when fed upon milk thickened with ground Oats or Barley meal is delicious. But when the family is absent in the winter, then only enough bacon hogs will be required for curing to afford a supply of bacon and hams during spring, summer and autumn. This is a mere matter of detail, the number of pigs being easily increased or reduced as may be necessary, if only enough sows are kept at the farm. An extra sow or two is immaterial, as they "pay for their keep" and something more—it has been very much more for the last year; and if we take the average number of its two litters a year at fifteen, we shall find the profits derived from a sow bear favourable comparison with those of a cow. Where breeding and selection have attention, and sows are well cared for, the average might safely be placed at twenty.

Well do we remember the time when it was everywhere customary for men and boys in charge of the farm horses to board and lodge with the bailiff, who used during winter to kill and salt enough pork to supply his table till the following Michaelmas. Fine fat hogs were they, weighing from 500 to 600 lbs., but their day at the home farm has gone by; porkers, and bacon hogs of about 300 lbs. weight are only required now. A middle white boar and compact sows of medium size, such as are to be found at most farms, give cross-bred pigs very suitable for the purpose. Stress is always placed upon the importance of a well bred male parent, and justly so. The term "profitable pigs" is altogether comparative; to render pigs really profitable every detail must have attention. It is not a question of the greater number; the most successful manager being he who breeds well, feeds well, and also takes care not to allow a sow to be burdened with more pigs than it can properly rear. It is often as desirable to knock one or two of an exceptionally large farrow on the head, as it is to get rid at once of any pigs very much undersized at birth.

Under ordinary conditions the remainder thrive apace and come to hand quickly either as porkers or for bacon. It is with bacon hogs that we are now most concerned, because the regular annual supply is in course of preparation, one batch following another as fast as is convenient. We always give bacon and hams a month in pickle and a month in smoke, and we have ample reason to keep to this plan. No doubt it is obsolete, but the fact that home-cured bacon must be forthcoming from the home farm at any time of the year is our guide in curing, which is so well done that hams and bacon keep perfectly sweet, wholesome, and of fine flavour for a year.

Bacon to be sold by the grocer and provision merchant is, on the contrary, cured, sold, and consumed with such despatch as is quite in keeping with the accelerated pace of the day. The bacon is palatable enough, but let the home farmer beware of the introduction of bacon factory curing at his farm.

The green bacon of commerce is now ready for market in eight or nine days from the slaughtering of the pig, smoked bacon in less than a fortnight. This is rendered possible by a forcing or pumping of brine into the pores of the pork. This brine is made of 45 lbs. of salt, 4 lbs. of food preservative, 3 lbs. of Cane sugar, 2 lbs. of saltpetre, $\frac{1}{2}$ lb. of sal prunella, and 20 gallons of water. After the pumping the flitches are sprinkled

over with a mixture of food preservative and saltpetre in equal parts, then rubbed with finely powdered salt, and so left in stacks for three days, when the stacks are turned, the salt rubbing repeated, and in a few more days is ready either for sale as green bacon or for two days in the smoking house. The brine may be used for any bacon if care is taken to test it with the salinometer, and to use it at a strength of 90°. Oak sawdust is used for the smoking, and it is occasionally sprinkled with Juniper berries to improve the flavour.

For the hams we altogether prefer the recipe which we have used for so many years, and which imparts a delicious flavour, far superior to that of any ham which can be bought. Old readers of the Journal are familiar with it; here it is for new ones: For a ham of 20 lbs.—2 lbs. of salt, 3 ozs. saltpetre, 3 ozs. bay salt, 3 ozs. Shallots, 1 oz. Coriander seed, 1 oz. Juniper berries, 4 lbs. treacle, $\frac{1}{2}$ lb. beef suet. Use enough water to cover the hams. Keep them in this pickle for a month, then smoke for a month.

WORK ON THE HOME FARM.

As we write snow is falling fast, the land is frost-bound, and farm work is likely to be confined very much to the homestead for the next few weeks, which will certainly not be idle ones. At the farmhouse there is the daily and bi-weekly churning of butter, the daily work among the cheese, the salting or placing in pickle of hams and bacon, the bacon house fire to keep going, the potting of lard, the plucking of poultry, the despatch of produce to the hall. The slaughter-house is in almost daily use now for the slaughter and dressing of sheep and pigs. See that mutton is hung long enough before it leaves the farm to insure tenderness when cooked—there must be a distinct understanding with the cook about this important matter. Flour from home-grown wheat shows the effect of the hot dry harvest in its superior quality, and the wheat was so hard and dry when stacked that a stack may be threshed whenever more wheat is wanted, if only it is done when the outside of the stack is dry. This may be thought a trifle, but when heavy rain has beaten against a stack day after day it is just as well to wait a bit before threshing. Let Oat crushing, Barley grinding, chaff cutting, and root slicing be done systematically. Allow none of the horses, cattle, or sheep to have whole corn. Some straw and hay may be used in rack and manger to amuse and quiet them, but we like the bulk of the food to be cut, crushed, or ground. We have had old horses fall off sadly in condition through feeding with whole corn, this has ever since been an incentive to put it out of the power of careless carters to do harm in that way.

See that thorough cleanliness has strict attention in every stable, hovel, or building of any sort used for stock. Insist upon the coats of cows, calves, and store cattle being kept as clean and free from filth as those of the horses. Clean dry litter or none must be the rule. Never suffer any animal to lie down upon sodden filthy litter, or upon a foul floor. Be much among the stock, study any special requirements of young or delicate animals, give a look round often of an evening, and see that all orders for shelter, warmth, and cleanliness have attention.

FERTILISERS AND FEEDING STUFFS ACT, 1893.

THE Board of Agriculture consider it desirable to give publicity to the provisions of the Fertilisers and Feeding Stuffs Act, which came into force on the 1st day of January, 1894, and extends to Great Britain and Ireland.

The provisions of the Act, which applies to wholesale as well as retail sales, may be classified as follows:—

- 1, Provisions relating to the warranty to be implied on the sale of a fertiliser or feeding stuff;
- 2, Provisions relating to taking samples and obtaining analyses; and
- 3, Provisions relating to offences, penalties, and legal proceedings.

PROVISIONS RELATING TO THE WARRANTY TO BE IMPLIED ON THE SALE OF A FERTILISER OR FEEDING STUFF.

Every person who sells a fertiliser (*i.e.*, any article sold as a fertiliser of the soil) which has been manufactured or subjected to any artificial process in the United Kingdom, or imported from abroad, is required to give to the purchaser an invoice stating the name of the fertiliser, and whether it is artificially compounded or not, and what is, at least, the per-centage of the nitrogen, phosphates soluble and insoluble (*i.e.*, in water), and potash, if any, contained in the fertiliser, and this invoice is to have effect as a warranty by the seller of the statements contained therein. This provision does not apply to a sale where the whole amount sold at the same time weighs less than half a cwt.

Every person who sells a feeding stuff (*i.e.*, any article sold for use as food for cattle) which has been artificially prepared, is required to give to the purchaser an invoice, stating the name of the feeding stuff, and whether it has been prepared from one substance or seed, or from more than one substance or seed, and this invoice is to have effect as a warranty by the seller of the statements contained therein.

Where any feeding stuff is sold under a name or description implying

that it is prepared from any particular substance, or from any two or more particular substances, or is the product of any particular seed, or of any two or more particular seeds, and without any indication that it is mixed or compounded with any other substance or seed, there is to be implied a warranty by the seller that it is pure, that is to say, is prepared from that substance or those substances only or is a product of that seed or those seeds only.

On the sale of any feeding stuff there is to be implied a warranty by the seller that the article is suitable for feeding purposes.

Any statement by the seller of the per-centages of nutritive and other ingredients contained in any feeding stuff made after the commencement of the Act in an invoice of such feeding stuff, or in any circular or advertisement descriptive of such feeding stuff, is to have effect as a warranty by the seller.

For the purposes of the Act, the expression "cattle" means bulls, cows, heifers, calves, sheep, goats, swine, and horses.

PROVISIONS RELATING TO TAKING SAMPLES AND OBTAINING ANALYSES.

The Act provides for the appointment of a chief analyst by the Board and of district analysts by local authorities.

Every purchaser of any fertiliser or feeding stuff, on payment to a district analyst of a fee sanctioned by the body who appointed the analyst, is entitled, within ten days after delivery of the article to the purchaser, or receipt of the invoice by the purchaser, whichever is later, to have the article analysed by the analyst, and to receive from him a certificate of the result of his analysis in the form prescribed by the Board.

Where a purchaser desires to have an article thus analysed he may, in accordance with regulations made by the Board, take three samples of the article for the purpose of analysis.

A copy of the Fertilisers and Feeding Stuffs Regulations, 1893, which have been made by the Board, appears at the end of this leaflet. These regulations must be strictly followed by any purchaser who takes the samples himself.

The Act provides, however, that a district analyst, or some person authorised by him in that behalf, with the approval of the body who appointed the analyst, shall, on request either by the purchaser or by the seller, and on payment of a fee sanctioned by the said body, take the samples on behalf of the purchaser.

It will be observed that the purchaser has the option of setting the Act in motion by merely sending to the district analyst, within ten days after delivery of the article to him or receipt of the invoice, whichever is later, a notice in writing stating that he desires that the samples shall be taken by the district analyst, and also stating the names and addresses of the purchaser and the seller, and such particulars as may be necessary to enable the district analyst to identify the article to be analysed.

The purchaser is, at or before the time when the samples are thus taken, to supply the district analyst with the invoice or a copy thereof, and also, in the case of a feeding stuff, with any circular or advertisement of the seller descriptive of the article to be analysed, which the purchaser may wish the district analyst to consider in making his analysis and giving his certificate.

When the purchaser intends to take the samples himself, he is to give three days' notice in writing of such intention to the seller, with particulars as to the place, day, and hour of sampling. If the seller does not attend, the samples are to be taken in the presence of a witness, who is to initial each sample.

The purchaser is immediately to deliver or send by post to the district analyst one of such samples with a report of the case, the invoice, or a copy thereof, and also, in the case of a feeding stuff, any circular or advertisement of the seller descriptive of the article to be analysed, which the purchaser may wish the district analyst to consider in making his analysis and giving his certificate. One of the remaining samples is to be delivered or sent by post to the seller, and the other is to be retained by the purchaser.

All samples are to be so packed and secured that they cannot be tampered with, and to be sealed and initialed by the person taking the sample, and numbered consecutively, and they may also be sealed by the purchaser and the seller, if present and so desiring. Each sample is to be endorsed with the name of the article, and the date and place of the sampling.

Where any samples are taken in the presence of and sealed by the seller as well as the purchaser, such samples are to be deemed, as between the purchaser and seller, to have been taken in accordance with the above mentioned regulations.

If the seller or the purchaser objects to the certificate of the district analyst, one of the samples selected, or another sample selected in like manner, may, at the request of the seller, or, as the case may be, the purchaser, be submitted to the chief analyst with the invoice or a copy thereof, and any such circular or advertisement as above mentioned, and the seller, or, as the case may be, the purchaser, is, on payment of a fee sanctioned by the Treasury, entitled to have the sample analysed by the chief analyst, and to receive from him a certificate of the result of his analysis. The fees approved by the Treasury for analyses by the chief analyst are, one guinea for each of the more difficult and complex samples, and half a guinea for each of those of a simpler character, the chief analyst determining in each case whether the higher or lower fee shall be charged.

The cost of and incidental to obtaining any analysis in pursuance of

the above provisions are to be borne by the seller or the purchaser in accordance with the results of the analysis, and to be recoverable as a simple contract debt.

PROVISIONS RELATING TO OFFENCES, PENALTIES, AND LEGAL PROCEEDINGS.

Section 3 of the Act makes the seller of any fertiliser or feeding stuff liable (without prejudice to any civil liability), on summary conviction, to a fine not exceeding £20 for a first offence, and for any subsequent offence to a fine not exceeding £50 if he commits any of the following offences—namely,

(a) Fails without reasonable excuse to give, on or before, or as soon as soon as possible after, the delivery of the article, the invoice required by the Act; or

(b) Causes or permits any invoice or description of the article sold by him to be false in any material particular to the prejudice of the purchaser; or

(c) Sells as a feeding stuff any article which contains any ingredient deleterious to cattle, or to which has been added any ingredient worthless for feeding purposes and not disclosed at the time of the sale.

In any proceeding for an offence under this section it will be no defence to allege that the purchaser, having bought only for analysis, was not prejudiced by the sale.

A person alleged to have committed an offence under the preceding provisions in respect of an article sold by him, will be entitled to the same rights and remedies, civil or criminal, against the person from whom he bought the article as are available to the person who bought the article from him, and any damages recovered by him may, if the circumstances justify it, include the amount of any fine and costs paid by him on his conviction, and the costs of and incidental to his defence on such conviction.

If any person knowingly and fraudulently—

(a) Tampers with any parcel of fertiliser or feeding stuff so as to procure that any sample of it taken in pursuance of the Act does not correctly represent the content of the parcel; or

(b) Tampers with any sample taken under the Act; he will be liable, under section 6 of the Act, on summary conviction to a fine not exceeding £20, or to imprisonment for a term not exceeding six months.

Section 7 of the Act provides that a prosecution may be instituted either by the person aggrieved or by the local authorities, or by any body or association authorised in that behalf by the Board, but that in the case of an offence under section 3 of the Act, no prosecution shall be instituted by the person aggrieved or by any body or association except on a certificate by the Board that there is reasonable ground for the prosecution.

It also provides that any person aggrieved by a summary conviction under the Act may appeal therefrom in accordance with the provisions of the Summary Jurisdiction Acts.

At the hearing of any civil or criminal proceeding with respect to any article analysed in pursuance of the above provision, the production of a certificate of the district analyst, or if a sample has been submitted to the chief analyst, will be sufficient evidence of the facts therein stated, unless the defendant or person charged requires that the analyst be called as a witness.—(*Board of Agriculture*).

METEOROLOGICAL OBSERVATIONS.

GAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude, 111 feet.

DATE.		9 A.M.				IN THE DAY.				Rain.	
1893. December and January.	Barometer at 32°, and Sea Level.	Hygrometer.		Direction of Wind.	Temp. of soil at 1 foot.	Shade Tem- perature.		Radiation Temperature			
		Dry.	Wet.			Max.	Min.	In Sun.	On Grass.		
		Inchs.	deg.	deg.		deg.	deg.	deg.	deg.	Inchs.	
Sunday ..	31	30.556	23.0	22.4	Calm.	38.1	38.0	21.2	37.3	22.1	0.012
Monday ..	1	30.335	35.7	34.7	N.W.	37.2	38.0	22.1	45.4	22.1	—
Tuesday ..	2	30.216	34.1	33.2	N.	36.9	36.4	32.0	46.9	28.2	0.047
Wednesday	3	30.572	27.9	26.1	E.	36.8	31.0	24.8	41.1	23.0*	0.048
Thursday ..	4	30.288	24.7	23.8	N.E.	36.2	25.9	23.1	39.8	20.4*	0.029
Friday ..	5	29.856	14.3	13.9	E.	35.9	19.8	13.1	38.2	20.2*	0.115
Saturday ..	6	29.647	23.6	23.1	N.E.	35.6	23.3	13.6	38.0	14.3*	—
		30.210	26.2	25.3		36.7	31.1	21.4	39.8	21.5	0.251

* Covered by the falling snow.

REMARKS.

31st.—Cold, with bright sunshine, and much rime in morning; cloudy afternoon; a little fog in evening.

1st.—Fine with occasional gleams of sun in morning; generally sunny in afternoon; fair evening.

2nd.—Fine with frequent sunshine in morning; snow showers at 0.30 P.M., and from 2.15 P.M. to 2.45 P.M., and occasional flakes later.

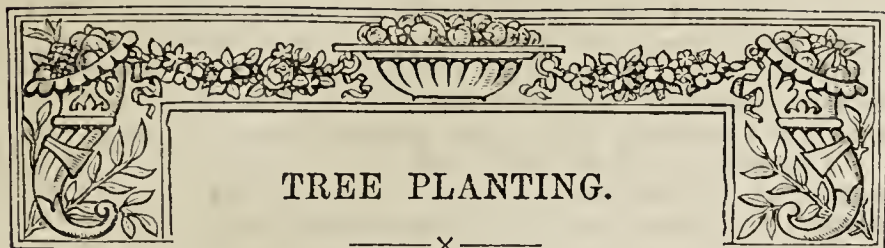
3rd.—Sufficient snow to cover the ground early, and frequent flakes or very slight falls all morning; much bright sunshine in afternoon; overcast evening; snow again at night, with high wind.

4th.—Snow early, making the depth on the ground about an inch by 9 A.M.; occasional gleams of sun, and frequent sprinkles of snow all day.

5th.—Frequent sprinkles of snow early (about 1 inch); bright sunshine from 10 A.M. to noon; overcast afternoon and evening; snow at night.

6th.—Snow early (2 inches deep by 9 A.M.), and overcast after; fog in evening.

A cold week, temperature much below the average, but not quite so cold as the corresponding week of 1893.—G. J. SYMONS.



TREE PLANTING.

NEVER was the planter's work put to a more severe test than in the great drought of last summer, never were results of good and bad work more pronounced, or the cause of them more apparent. Undoubtedly it caused much anxiety because of its extraordinary duration, but a little more watchfulness than usual, with some extra care of the trees planted last winter, was sufficient to enable them to derive full benefit from the finest season for growth, development, and well ripened wood of our time. Persons who ignored the first principles of planting, or were too careless to apply them in practice, have been loud in their outcry about losses from the drought. Will they be surprised to hear that the long, hot, dry summer was a positive boon to those planters who knew how to take care of their trees, and did it? It can do nothing but good to go sufficiently into particulars to make clear the causes of success or failure, in view of improvement in practice where it is so entirely possible, and to prevent losses of trees, of time, of money—often too of patience, by those who spend it, and who have a reasonable right to a fair return for it.

Of work which came under my control last season two or three examples may be given by way of illustration. Early in November 1892 a new kitchen garden and an orchard were planted with fruit trees and bushes—standards in the orchard; pyramids, espaliers, cordons, and dwarf trained trees around the garden quarters and against the walls; Peach and Nectarine trees in the fruit houses. The soil had been carefully prepared by draining and trenching, so that when the trees were received from the nurseryman there was no waiting, they were unpacked and planted at once. Every tree, of whatever form or kind, had its branch growth thinned and shortened, bruised root ends taken off with a clean cut, the roots carefully spread out at full length, well packed with fine soil pressed firmly upon them by treading, and planted at the same depth as it had been at the nursery. Each tree requiring support was made so secure that it could not be loosened in the soil by storms, and a mulching of short stable manure about 6 inches deep was applied from each stem outwards, far enough not only to cover the soil in which the roots then were, but that also into which new root growth would enter.

By the end of the year the pruned roots would be bristling with a new growth of rootlets—feeders for the trees in the following spring. Therein lies an important advantage of early planting, and my expectations of vigorous spring growth realised. Growth was well sustained throughout the season and entirely satisfactory, that of the Peaches and Nectarines being especially remarkable, most of the trees at the fall of the leaf in the autumn of 1893 having a spread of 9 feet. The wood is, moreover, well ripened, and much of it bristling with those plump triple buds which are a sure indication of fine fruit this season. With such thorough mulching the trees only required water occasionally, because evaporation was so well checked by it that the soil was kept precisely in that warm moist condition so favourable to the free unchecked growth of root and branch. In the Peach houses, a constant use of the syringe with plenty of clean water kept the leaves clean and free from spot or blemish of any kind. Some forest trees and shrubs planted about the same time with similar care on the same estate also made good growth.

In another county for unavoidable reasons a new fruit garden

could not be planted till March, yet by the exercise of great care in planting, and especially in the mulching and subsequent watering, growth was so satisfactory that dozens of Apple cordons were allowed to mature some fruit. It is unnecessary to dwell further upon the details of the planting, as it was precisely similar in each case.

Of failures which came under my notice, the loss of many hundreds of trees and shrubs in a new public park was one of the most startling. How the planting was done I cannot say, but afterwards the trees were left to take their chance of what might follow. My inspection induced the conclusion that the planting had been done carelessly; certainly no mulching had been used, and for supports the trees had only single stakes, from which they had broken loose owing to the weakness of the string. Frequently in planting a large number of trees much harm is done by exposing the roots to the air—to frost, wind, and sunshine—causing the rootlets to perish. This alone tells seriously against them, root action when growth begins being so feeble that a drought commencing so early as did that of last year would be fatal to them.

In one instance some Peach trees which I saw last autumn had been planted two years, but had made no appreciable growth. The owner of them—a market gardener—said Peach trees would not answer with him, and he must try something else! Apparently such things as watering and mulching had never been thought of by him, for he told me as something remarkable that he had dug a hole near one of them last summer, and found the soil “dust dry” to the depth of his spade! Comment is unnecessary, but I record the fact, as skilful practitioners would hardly suppose such ignorance or want of thought to be possible.—EDWARD LUCKHURST.

GARDENERS' HOLIDAYS.

GARDENERS' holidays appear to me so impregnated with the working spirit pervading our lives, that a little chat about them may not be out of place amongst the more solid matter in the *Journal of Horticulture*, which certainly would, if they consisted of high junketings or boisterous revelry; but they are so peculiarly different to the relaxations of other workers—bearing fruit in the form of notes and jottings from many pens, not the least palatable amongst the many good things in its pages. Pleasant reading are these notes, fresh and crisp as those of the “Old Lady of Thread-needle Street,” though it was once remarked to me by one whose business lay more with the latter than the former, on reading a gardener's note in which a little extra praise had been allocated to the visited by the visitor: “Oh! you gardeners are like the Hottentots who butter one another all over.” Though not agreeing with him, I have since thought there was a grain of wheat amongst his chaff.

The marked difference in our holidays and those of a business man, who in putting up his last shutter shuts up his shop completely and goes off fancy free, is that, metaphorically, we needs must carry our shop on our back—plant houses, vineries, and other impedimenta which are ever crying out for water, fire, or other necessities. Though young heads are left in charge, the old heads carry the anxiety with them. Still, if we take our pleasures quietly it is not sorrowfully; and how enjoyable it is to pay a visit to an old friend, and after a journey of perhaps some miles across country and nearing his house you sniff the welcome in the air, certain mysterious odours from the interior mingling with the scents of Flora outside. It is—yes, it is really grateful and comforting. I cannot avoid retailing some of my experiences of what are to me ideal holidays. “What can we reason but from what we know?” An old friend and his family to meet, a hearty welcome, plenty to look at after, and so much to talk about. But this part of the programme is never finished. And what do we talk about? is it not shop?—a vulgar simile, but expressive; and that spoil we go

home laden with! Is not that shop too in the form of roots or cuttings parcelled up, and some scraps, mayhap, fixed in the lining of your hat, yes, and some fresh ideas in the head under the hat? So, judging by myself as the ordinary type of gardener to be met with in these islands, I conclude that our shop is fixed as firmly on our backs as the house on a snail; to remove either would entail a catastrophe.

Many employers do give every facility for these mutual visits. Yet are there a few places in which from the time you enter till the time you leave a sense of dread prevails, and you are ready to run for the nearest ambush in the form of shrub or tree at the ominous words, "some of the family." This is a mistake, to obviate which it would be better for master and man to have a proper understanding as to whether his gardening friends might be visible, and I think there are but few owners who would deny the privilege if the matter was rightly placed before them.

Some of us can say we get too many holidays, unless they be in the form of those gaps in our lives coming between two situations. These I dismiss, for there is no pleasure in contemplating them, but the amount of pleasure in the pleasant ones is not, happily, in ratio to the time they occupy. Many of us do perhaps feel a little envious of the few so happily placed as to be able to make annual peregrinations lasting days, and in some cases weeks; but again, with a little philosophising we may be able to draw around ourselves curtains of comfort, and with heart and mind fixed in the endless variety of our work learn to look upon our lives as one long holiday. Some can do this, and I do not know that these happily placed men are to be much envied, if we consider the amount of labour and fatigue they face on their holidays, rushing off at express speed to the uttermost ends of the kingdom to judge at some show, to find themselves again judged by experts; to go down to the sea in ships; to be severely shaken on Irish jaunting cars for twenty-five miles at a stretch. No, we will not envy them; we will honour them for the sacrifice. I have given you at starting my ideal of a gardener's holiday; these latter, enviable ones, we, I think, enjoy better through the notes and jottings over the pipe of peace at home, and here we can, at a small outlay, visit torrid and frigid zones, visit Borneo, "the gardens of the sun," in the company of a scientist, traveller, and, last not least, a gardener; and what we miss in these imaginary travels we must, for compensation, think of the dangers we escape—incurred by these earnest men in fighting extremes of climate.

We, too, can gather the ripe fruit of experience, of the clear head, the warm heart, through the medium of a facile pen as exemplified in the New Year's address of "D., Deal," as well as the pleasure—a pleasure qualified by his opening remarks that a younger voice and hand might be preferable, and to which there can be but one answer. No! emphatically no! The green fruit may promise well, but give us the ripe fruit that we know is so good. May it yet for years to come be the premier dish served up to us in the New Year's number of the Journal (the holiday number may I call it?) to serve as an excuse for my erratic pen, seemingly gone a little way from the text, but easy, I think, to connect the pleasures of our brief holidays with those of knowledge and wisdom.

"Whose ways are ways of pleasantness,
And all her paths are peace."

—E. K.

HALF HOURS WITH GREAT AUTHORS.

THE TWIN ASPECTS OF CULTURE.

THE temptation to indulge in a lay sermon, directed, of course, against somebody else, is one that, at some time or other, assails nearly all of us. There occur such reprehensible instances of moral obliquity, that it seems nothing short of a duty to fulminate against them, albeit the denouncer would often be better employed in a little wholesome self-condemnation.

Now, in this and any other communication of a like nature which may follow it, if haply it should be found worthy of type, it would ill become me, for reasons drawn from reflections on the truth of my last sentence, to fall into the temptation foreshadowed by the first. What I wish to do is to call attention to the points of some of our best writers, outside the narrow trammels of the formal review, and to deduce from them some lessons which may be of value from a gardening point of view, without an excess of redundant and pedantic moralising.

I should commence with a sad platitude if I were to say that even the specialist is benefited by general reading, and yet it would not be an entire waste of words to enter a mild protest against the strong tendency which affects most persons who are pursuing any particular course of study to read and think in one groove; and this protest I think the more pardonable, inasmuch as its effects

would be in the direction of breaking down narrow conceptions and opening up broader and wider views—not only of things in general, but even, and also, of the special subject which is being followed up. Thus the military pupil studying gunnery is not confined to the mastery of the methods of ramming in charges, but is directed through a course of study, which embraces the principles of manufacture, combustion, vacuum and wind resistance, and many other points which are a sealed book to the ignorant artilleryman, but a necessary part of the mental equipment of his officer.

The same principle holds good in the more peaceful art of gardening. Would we be as the rank and file, then let us be content with practising the rapid spreading of manure. Would we be as the masters of the profession, then let us go beyond the mere muscle work, and learn what the manure is, what its constituents are, the different crops to which the different kinds can be best applied, and the reasons why they are benefited by it. It is satisfactory to observe that on the whole there is a far more pronounced desire for advanced information on the part of the rank and file of gardening than of gunnery, and it is mainly for this reason that I am hopeful that a casual chat about books and what their writers tell us may find an occasional welcome.

In response to the oft-repeated and sometimes almost despairing question, "What shall I read?" I have wondered if it would be thought a mere idle conceit to suggest that all good writing, no matter what its subject, must of necessity be helpful to every student. To give an instance, it is hardly likely that many young gardeners would turn to the criticisms of Carlyle on German literature for any help to them in their special line of work, and undoubtedly if their search were in the direction of ascertaining the constituents of a Parsnip or the elements of a heap of stable manure they would look in vain. But on the higher ground of ethics, on the noblest aspects of knowledge, on the question of the perception of high principles in respect to beauty and conduct, on the intellectual grasp of motives, as well as the physical capacity for action—on these and many other grounds the Chelsea sage may be looked up to as a wise and eloquent master.

At the outset I must confess my inability to copy the methods of the fashionable reviewer by laying bare the inner lives of my authors. Not, perhaps, that my knowledge of Carlyle was less than theirs of the various great men with whom they deal. When a small boy in a Chelsea nursery years ago, I more than once had the privilege of staring in awe at the wonderful old man before whom the finest intellects of the past few decades have humbly bowed, and on one occasion I even picked up his umbrella. He lived in a row of old-fashioned houses near the river, and his rugged features were as familiar to the 'bus conductors in the neighbourhood as those of the Personally Criticised are to the Personal Critic. But let his writings satisfy us. Carlyle has spoken strongly on the necessity for thoroughness on the part of the students, else may the master be misconceived. Do not, he says in effect, be hasty in condemning that which is not easy to understand, but try as hard to grasp the writer's meaning as the latter has done to express it.

"The reader must faithfully and toilsomely co-operate with him [the writer] if any fruit is to come of their mutual endeavours. Should the former take up his ground too early, and affirm to himself that now he has seized what he has not seized; that this and nothing else is the thing aimed at by his teacher, the consequences are plain enough—disunion, darkness and contradiction between the two."

Might not this be taken as the basis and foundation of all study? Would not every student, whether of gardening or any other subject, act wisely by laying these words to heart?

My title this week is "The Twin Aspects of Culture," and my point is that it should be clearly recognised that there are two, the one differing widely from the other, yet capable of uniting with it to form a fruitful and harmonious whole. I need not stop for a moment to dwell on what may be called the Practical Aspect of Culture, the manual work, for it and its importance are clearly seen and widely recognised; but as to the intellectual or spiritual side it may be well to pause. Do any of us feel tempted to say that such and such a thing is beyond our capacity, that we are incapable of improving ourselves? Let us take heart of grace from Carlyle's eloquent words:—

"The great law of culture is: Let each become all that he was created capable of being; expand, if possible, into his full growth; resisting all impediments, casting off all foreign, especially all noxious adhesions, and show himself at length in his own shape and stature, be these what they may."

Perish all thoughts of remaining in the mental darkness which is so common, because so easy. Rouse yourself! says the philosopher; work, study, be no longer the mere clod, the spoke in the wheel, but expand, develop every latent capability, and so attain to the

higher ground where the breezes blow more purely and the view is richer and wider. Here is a beautiful passage, referring directly to the German writer Richter, but which might refer indirectly to every earnest student :—

"Inanimate Nature itself is no longer an insensible assemblage of colours and perfumes, but a mysterious Presence, with which he communes in unutterable sympathies. . . . The infinite Night with her solemn aspects, Day, and the sweet approach of Even and Morn, are full of meaning for him. He loves the green Earth with her streams and forests, her flowery leas and eternal skies ; loves her with a sort of passion, in all her vicissitudes of light and shade ; his spirit revels in her grandeur and charms ; expands, like the breeze, over wood and lawn, over glade and dingle, stealing and giving odours."

Who, reading this wonderful word picture, shall say that there is nothing in Carlyle for gardeners' reading, and that I do wrong in turning to him for the first of my quiet half-hours ? There is not only beauty in it, there is encouragement and inspiration. Like a flash of lightning in an inky sky, it shows in letters of flame the second of the twin aspects of culture.—W. P. W.

(To be continued.)



CYPRIPEDIUM FAIRIEANO-LAWRENCIANUM.

THIS is a distinct hybrid *Cypripedium*, being the result of a cross between *C. Fairieanum* and *C. Lawrencianum*, and when exhibited at the Drill Hall, Westminster, on November 30th of last year by T. Statter, Esq., Stand Hall, Manchester, an award of merit was adjudged for it by the Orchid Committee of the Royal Horticultural Society. As will be seen by referring to the illustration (fig. 7), the upper sepal is broad, slightly reflexed, white and green, heavily veined with deep purple. The petals are long, deflexed, green, spotted purple, with hirsute margins. The lip is medium sized and a bronzy green shade. The flower from which the engraving has been prepared was borne on a scape about 9 inches in height.

MASDEVALLIA PUSILLA.

THIS belongs to the section *Saccolabiæ*, and is the smallest flowered species of the group. It is, says the "Kew Bulletin," readily distinguished from every other by this character, the less open tube of the sepals, and the nearly parallel or scarcely divaricate tails. It is perhaps nearest *M. troglodytes*, *E. Morr.* The sepals are pale yellowish green, densely spotted with dark purple-brown, and somewhat suffused with a lighter shade ; the petals are yellowish white with a pair of large purple-brown blotches, and the lip has many light brown spots and some purplish lines near the base. The sac of the lip is unusually small. It flowered at Glasnevin in August 1891, and on subsequent occasions, when it was sent for determination by Mr. F. W. Moore, the keeper of the Royal Botanic Gardens.

TRICHOCENTRUM ALBIFLORUM.

A CURIOUS little species sent to Kew in 1891 by Mr. Hugo Finck, of Cordova. It flowered in September 1892, and again during the present year. It is allied to *T. candidum*, *Lindl.*, from Guatemala, which is apparently the only other species in which the spur is reduced to a very short sac. *T. candidum*, however, has much longer leaves, and various differences of floral structure. In the present species, the "Kew Bulletin" observes, the spur is distinctly bi-dentate. The flowers are white, with the exception of a purple stain at the junction of the lip with the column.

ONCIDIUM SANDERIANUM.

A HANDSOME species of the section *Microchila*, allied to *O. annulare*, *Rehb. f.*, and *O. monachicum*, *Rehb. f.*, both of which have the peculiarity that the petals remain tightly clasped together at their much-crisped tips, forming a ring. As regards its general appearance, the "Kew Bulletin" remarks, it approaches the Venezuelan *O. falcipetalum*, *Lindl.*, in which the petals are falcate and much crisped, though according to ample dried specimens they usually become free. The flowers are chocolate-brown, the dorsal one with a narrow yellow border. The petals are golden yellow broadly barred with brown, except at their tips. The lip is brown with a yellow crest, and nearly purple

side lobes. Plants have recently been imported by Messrs. F. Sander & Co., of St. Albans, from Peru, together with dried specimens, from which this description has been prepared.

ENRICHING THE SOIL DURING AUTUMN AND WINTER.

(Concluded from page 571 last vol.)

IN my recent article on this subject I treated on the importance of digging heavy soils during the autumn or early winter, in order to expose them to the pulverising influence of frost, wind, and sunshine, which render them more easily worked at sowing and planting time. I have now to deal with soils of varying degrees of lightness, which by reason of their porosity are readily worked, but, for the same reason, are incapable of long retaining the elements of fertility given from time to time.



FIG. 7.—CYPRIPEDIUM FAIRIEANO-LAWRENCIANUM.

The first step towards the improvement of sandy or gravelly soils naturally seems to be to mix with them soil of closer texture to make them more holding, and to prevent the food applied in the form of manure being washed into the subsoil before the crops have had time to appropriate it. This may to some extent be effected by the application of clay or marl, a slight annual coating of which, in conjunction with plenty of manure, will work wonders in the improvement of the poorest of soils. The best mode of preparing and applying this is to obtain a sufficient amount in the summer months, dry and crush it, then spread it upon the land in the autumn, when the action of the weather will reduce it to a still finer condition. Where no preparation of this kind has been made, it may be spread in large lumps upon the ground, but reduced to as fine a state as possible before digging in. Soils containing much sand or gravel, for the first few years during which they are cultivated, require many dressings of manure annually, and a gradual deepening if they are to be made profitable. Cow manure I have found to be unequalled for the purpose, as it is both a powerful fertilizer and an excellent agent in bringing porous soils into a more retentive condition. Whatever kind of manure is employed when ordinary digging is being done should be thoroughly decomposed ; for, although manure in a fresh state contains more real plant food, yet, being rough, it

would tend to make light soils still more open; moreover, it is then inimical to root action. When, however, fresh manure is dug into land during the autumn, as decomposition takes place the whole of the manurial properties are absorbed by the soil, and the utmost benefit is derived from it.

Bearing the foregoing in mind, some may, with a good show of reason inquire, Why, then, is this course of treatment not advised for light soils, which are invariably the poorer ones? The answer has already been given, but I think it well to repeat it in a more emphatic form here. If fresh manure be applied to light soils sufficiently long before planting takes place to enable the manure to become decomposed by the time roots are formed, having so little power of retaining moisture, the greater part of the virtue of the manure would by that time have passed beyond their reach, and as fresh manure is invariably the rougher, applying this would still further facilitate the escape of rich foods. For these reasons, therefore, it has been found expedient to defer the digging of light soils till the spring; but as so many operations have to be performed at that season, it is important to have everything in readiness as far as possible, so that the work may be pushed on with speed when the weather breaks up. In doing this, however, we ought to avoid falling into the error of allowing manure to lie long exposed in such a way as to permit its most potent properties to escape into the atmosphere.

Manure placed in pits provided with a cesspool for carrying off superfluous water, or that which has been trodden under the foot of cattle while decay is taking place, is immeasurably richer than that formed of the same materials and thrown together in a heap to decay, because in the latter case rapid fermentation dispels much of the nitrogen. Where pits are not provided for manure it is therefore a wise expenditure of labour to make them, or if the manure heap in a fresh state must be continued it should be trodden firmly whenever large additions are made to it, and common salt be scattered upon the surface, which will, to some extent, fix the ammonia. When the pits are emptied at this time of the year the rough portions on the surface should be placed on one side, and the short manure thrown into a heap. It is then ready for wheeling on to any vacant quarters during the prevalence of sharp frosts. If placed in heaps where required and covered with a little soil all will be in readiness for digging in when the weather permits without any appreciable loss in the quality of the manure resulting through thus forwarding the work of spring.

When very poor soils are being double dug I find it an excellent practice to prepare some fresh manure by shaking as much as possible of the straw from it and then to mix the residue freely with the subsoil as it is broken up. In this way the soil is speedily enriched to a sufficient depth, and that portion of it in which the seeds are sown or plants set is in such a condition as to enable roots immediately they are emitted to permeate freely and assimilate the food which surrounds them.

The adoption of such methods as these tends not only to employ much native labour, but also to unlock the vast store of food which is ever present in Nature's storhouse—the atmosphere—that the fertile soil of this sea-girt land may be made to yield such abundant harvests as its geological composition enable and her geographical situation and vast population demand that she should do.—H. DUNKIN.

DEEP VINE BORDERS—WATERING.

MANY new Vine borders will shortly be made, and those gardeners with varied experience in the work will make them wisely and well. Some comparatively new to the work will probably make errors in the construction of the borders and in planting the young Vines. I have had to deal with borders which were 6 feet deep and very wide, and the compost had but little opening material in it. In such borders, I think, the roots, if they go down deeply, will, many of them, annually perish. They are then out of reach of the sun's influence.

One outside border which I had charge of a few years ago was located in a very cold position. The sun never shone on one end of it. A Vine planted there was in an unsatisfactory condition, so we took out a trench 1 foot wide down to the drainage across the extreme end, left it open except at the top, which was covered with stone slabs so placed as to admit plenty of air. The border during the following season was drier—more under control—the Vine grew stronger, and produced better bunches of Grapes which did not shank as they did before the drain was made.

Unless the ground is naturally very gravelly it is best to concrete the bottom, placing a drain at the lower side on the concrete and under 9 inches or 1 foot of drainage material—i.e., old bricks and broken stones. Upon this place a layer of sods grass side down, whole, as taken up from some old pasture. If the soil be of a retentive nature, break up plenty of old tiles and bricks, mixing them, and some old mortar rubbish, free of wood, with the roughly chopped turves which form the border. A depth of 2 feet 6 inches of soil will be sufficient. Making the border piecemeal is, I think, the best plan; 4 feet wide the

first year, and adding a few feet each season as required. I do not favour the mixing of any farmyard manure with the compost which forms the border. If made during this month the soil will have settled down and be in fit condition for planting at the end of February.

Planting during the months of May and June does not find favour with me. Many practise it successfully, and I have nothing to say against it; but for beginners the safer plan is to shake out the soil carefully from the roots, spreading the latter out evenly, and covering with 4 inches of finer soil of the same nature as that composing the bulk of the border. If the Vine rod be shortened at the time of planting the wounds must be dressed with styptic to prevent bleeding. If not shortened then, the young growths must be rubbed off down to the level of the glass when an inch long or so. Frost only should be kept away from the young Vines after planting. No attempt to force them must be made. Growth should start very slowly with the heat from the sun only, but once started, an even temperature must then be maintained, not excessive at any time. An inside border, if practicable, is best.

Well constructed Vine borders require constant attention as regards watering, but where very deep ones have to be dealt with discretion must be exercised. When once it is thoroughly wetted through, providing a good mulch be applied, such a border will remain in a moist condition for a number of weeks. I have only watered a border as that just named twice during an extremely hot summer, the growth and finish of the Grapes being very satisfactory; whereas in previous years when water was too freely given, shanking of the berries occurred very much. A well known gardener once, when writing in the *Journal of Horticulture* on watering plants in pots, said that the person doing it should "think through the soil" before watering, and I say here that his advice may apply with profit to those who have the management of Vine borders.—G. GARNER.



CLASHING OF DATES OF ROSE EXHIBITIONS IN 1894.

IN reference to your remarks (page 34) about the Reigate Rose Society, which has been resuscitated by Mr. R. E. West, it is very unfortunate that the managers of this Show have chosen the same date for their fixture as that on which the Croydon meeting will be held. The Croydon Horticultural Society has for many years held its shows (which, I may remark, Mr. West has usually attended as an exhibitor) on the first Wednesday in July, and in 1893 spoiled their Rose exhibition by being unwilling to alter this invariable date. Similarly the Reigate Society has hitherto held its shows on a Saturday, and when altering the day of the week for their exhibition the new executive have not shown much care in selecting a date which will now clash with that of a neighbouring Society. I hear that the Sutton Rose Society has unfortunately selected the 27th June for its exhibition, this being the date of the N.R.S. Show at Windsor; but it is to be hoped this error will be promptly set right. It is a pity and against the interest of societies not to endeavour to carefully arrange their fixtures, as two fixed for the same day in the same Rose district cannot be otherwise than injurious to the best interests of their promoters.

THE HYBRID TEA QUESTION.

I am glad to see so great a rosarian as Mr. Lindsell (page 34) giving his vote and writing in support of "W. R. Raillem's" and my comments on the new Hybrid Tea class of the N.R.S. In connection with this question I may say that I have endeavoured to arrive at some good reason for the inclusion of La France amongst H.T.'s, and as this Rose is closely allied with Augustine Guinoisseau and other somewhat important new varieties, it is of consequence to rosarians that some explanation should be forthcoming for its transference from the H.P. to the H.T. class. I cannot find any trace of the parentage of La France in any of the usual authorities, and not only am I told, but also have recently read, that its parentage is not known and cannot now be traced. I do not myself see the faintest resemblance to or sign of Tea Rose origin in the variety, and the removal of this beautiful flower to "another place" is certainly neither promotion nor a desirable change or improvement in classification, nor does it seem to me to suggest anything but the carrying out of certain preconceived views by a section of the N.R.S. Rose Catalogue Committee, whose zeal in this case was not tempered with discretion.—CHARLES J. GRAHAME.

WHAT a delightful imbroglio has arisen upon this question! nor can I say much to my surprise nor dissatisfaction, for I suppose it is in human nature to rejoice when one's anticipations are realised. I think all who know the course that I have adopted ever since the question was first mooted will agree that my view on the subject has been a consistent one. When my good friend "A. C." advocated the admission of Cheshunt Hybrid, which was the first and only Hybrid Tea for years (would that it had remained so), amongst Tea Roses I stoutly fought against it, and I think Rose exhibitors were glad thereof, for however useful it may be as a garden Rose its colour and form make it utterly

out of place amongst the refined and delicate coloured Teas. When the late Mr. Henry Bennett introduced Viscountess Folkestone and Grace Darling, and Guillot transferred La France from the Hybrid Perpetuals, in which section it had existed for many years, it assumed a new aspect, and it was asked where these were to be exhibited. It was proposed by some to form a separate class for them; this for some years I resisted to the best of my ability, but in an evil hour, as I think, the Catalogue Committee of the N.R.S., influenced mainly, I think, by one strenuous advocate, introduced into their new catalogue a section for Hybrid Teas, and this, as I think, retrograde movement interferes with its usefulness. Of course, as loyal members of the Society we shall bow to its decisions, but this does not hinder us from advocating a return to the old path; nor do I think that because I am one of its secretaries I am hindered from adopting this course. Our committee is not a cabinet whose members are supposed to be all of one mind and who are bound to keep secret its deliberations and decisions—we are rather a committee of the whole House, where full freedom of opinion and speech is allowed and its proceedings are open. Your correspondents Mr. C. J. Grahame and "Practice" have already given most of the reasons against the arrangement, and I desire only to accentuate them, not in a position of secretary carrying no official weight, but simply as a member of the N.R.S.

Let us take an example. The Rose La France was sent out by Guillot in 1867 as a Hybrid Perpetual. He afterwards put it in amongst the Hybrid Teas; but by the great majority of exhibitors it is still regarded as a H.P., and now see what the action of the N.R.S. has done for it. It and its three sports—Augustine Guinoisseau, Duchess of Albany, and Danmark—cannot be shown in any class of Hybrid Perpetuals. It is true, as "Practice" says (page 12), that very few classes, even at provincial shows, are arranged for H.P.'s alone, but when they are these Roses are excluded. They cannot be shown, of course, amongst Teas and Noisettes, and I do not think when we consider the smallness of the number included in this class that we are likely to get much of an exhibit of them alone; indeed, when you look through the list included in this section you are surprised how short it is—there are only eleven, and of these four must be referred to one Rose, for Augustine Guinoisseau, Danmark, and Duchess of Albany are merely sports of La France, and are oftentimes found to revert to the original type. Then there are our old friend Captain Christy and its sport, Climbing Captain Christy, which accounts for six out of the eleven, and it is for the allocation of these that all this fuss has been made. Surely never was there more "ridiculus mus" brought forth. Surely it is not contended that these are the only exhibition H.P.'s which have Tea blood in them; and if not, why has not the list been extended? Just because if you mention any one Rose as belonging to this section there are the most diverse opinions as to whether it does so or not. What, then, is the remedy? I would propose that which has been already brought forward by Mr. Grahame (page 577, last vol.)—viz., that of including Hybrid Perpetuals, Hybrid Teas, and Bourbons under the one heading of Hybrid Perpetuals. I say Bourbons advisedly, for I see little distinction between them and H.P.'s. Take for example Mrs. George Paul; is not this best described as a bluish white form of Madame Isaac Perriere? but that Rose when first sent out was called a H.P., and it was afterwards transferred to the limited list of Bourbons. By this arrangement I think a great deal of trouble and confusion would be avoided, and questions of disqualification would not be likely to occur, while that which is most desirable in all such matters—simplicity—would be attained.

I cannot, however, agree with your correspondent "Practice" (page 12) in wishing to include in one class not only these but the Hybrid Bourbons and Hybrid Chinas. He asks what difference there is between Charles Lawson, and others which he names, and many of the H.P.'s. There are two very material ones; in the first place they never by any chance give a second bloom, and in the second place they are all essentially pure Roses, and are out of bloom before our exhibition season commences. They are no doubt many of them very beautiful, and possess that characteristic of delightful fragrance in which so many of our H.P.'s are wanting.

I daresay these suggestions will be regarded as revolutionary and impracticable. There are some people who have a mania for minute classifications, and would shrink from taking their part in the composition of an amalgam such as I have recommended, but none the less do I believe that this idea will gain ground. I consider that the idea of separating the Hybrid Teas is so utterly unsound that it will not bide the test of experience. I have several times during the course of my long secretariat found myself in opposition to the majority of our Committee, and never, except in one case, that of Mr. Grahame's classification of exhibitions, have I had cause to regret the position that I took up. As a non-exhibitor I cannot be biassed by any interested views in that direction. I may be wrong, but at the same time I can truthfully say that I have but one object in view, the welfare of the Society and the convenience of exhibitors, and I look forward to the time when these views will be accepted by the great mass of our growers and exhibitors.—D., Deal.

ARE not your correspondents upon the above matter distressing themselves unnecessarily? Through all their letters there runs a minor tone which seems to imply that these flowers have on the one hand been deposed from some position of honour, and on the other saddled with a disqualification. Surely this is not so, but rather the contrary is the fact. Hybrid Teas may now be shown in all classes in which they were ever eligible, and in addition they have a class or classes provided expressly

for themselves. Where is the hardship in this? There has always been a certain amount of difficulty in deciding the exact parentage of some of our Roses, and always will be except when seedling raising is conducted strictly upon the careful lines laid down by the late Mr. Bennett and by Messrs. Dickson & Sons; but all that the list in the N.R.S. catalogue does is to specify which Roses may be shown as Hybrid Teas in the special classes provided for this section.

There cannot be any reasonable objection to a Society devoted to the especial care of the Rose providing for all the well defined branches of the subject. H.P.'s exist and classes are provided for them. Teas and Noisettes are grown, and they are provided for in the schedules. Garden Roses are with us and have their own classes; and for Moss Roses provision has been made. Then why not for the Hybrid Teas, which, as a family, are rapidly increasing, and already contain some of the freest bloomers and most chastely beautiful flowers? And if they are to be shown it must be (in the present undecided position of some varieties) a convenience and benefit rather than otherwise to have an authoritative declaration as to which may be included.

I believe that in the course of another season or two the classification and cataloguing of the Hybrid Teas will result in a considerable increase in their culture, for while the rosarian pure and simple has grown and will grow them for their essential beauty, the exhibitor will feel that he also can spare room for them now that there is an opportunity for the display of his skill in their cultivation. The fact that the class did not fill in the first year of its introduction (and such a year!) signifies nothing.—J. B.

ROYAL HORTICULTURAL SOCIETY.

JANUARY 16TH.

THE first meeting of the current year was held at the Drill Hall James Street, Westminster, on the above date. There was a fine display of bloom, Orchids being specially well represented. Fruit and vegetables were also shown in good condition.

FRUIT COMMITTEE.—Present: Philip Crowley, Esq. (in the chair) with Dr. Hogg, and Messrs. John Lee, Harrison Weir, G. W. Cummins, C. Herrin, J. H. Veitch, J. Cheal, G. Taber, T. J. Saltmarsh, A. Dean, H. J. Laing, J. Hudson, W. Bates, G. Wythes, G. Sage, F. Q. Lane, H. Balderson, G. T. Miles, J. Smith, and J. Wright.

The Chairman gave his colleagues a pleasant greeting, and expressed a hope that the meetings of the year would be as agreeable and useful as those of the past. The first fruit placed on the table was in the form of a dish of a new Apple, Jenny Brewster, sent by Rev. H. C. Brewster, Kelsey Rectory, Caistor, Lincolnshire. It is said to be the result of cross fertilisation, but the letters explaining the parentage were the reverse of clear, and the writer had evidently made a mistake in one of them. The fruits were not tempting in appearance, through probably in the first instance having been gathered too soon and then affected by frost, but the flavour was such as to induce the expression of a desire to see specimens in good condition in the spring of next year. The fruit is said to keep till May. Mr. W. C. Leach, Albury Park Gardens, sent a seedling Apple, named Warksworth Castle. It closely resembled Grange's Pearmain, and though no doubt a useful late cooking Apple, was passed. A dish of Albury Park Nonesuch was also sent. It was described as an excellent cooking Apple, and was granted an award of merit last year. Mr. H. Bannister, Cote House Gardens, Westbury-on-Trym, sent a dish of a new Apple, Standard Bearer. It resembles the Cobham, a good form of the Blenheim, with which it is to be compared on a future occasion.

Mr. J. Dumble, gardener to Sir Charles Philipps, Bart., Picton Castle, Haverfordwest, sent a dish of the Bahia Navel Orange, very fine specimens grown on a tree carrying two dozen fruits in a 15-inch pot. The Oranges were very large, oval shaped, seedless, and sweet. A cultural certificate was awarded.

The Chairman placed on the table a sample of "Taro" prepared from the root of *Colocasia esculenta*, as used by the natives of the Sandwich Islands. Samples were shown in the form of powder, like silver sand, also in a cooked state. It resembled a starch pudding, but not flavoured with anything. A vote of thanks was accorded. A bronze medal was awarded to Mr. Leach for Lady Downe's and Mrs. Pearson Grapes. Messrs. Osman & Co. exhibited a simple contrivance for trapping wireworms. It is in the form of a sharp-pointed tin extinguisher full of large holes; Carrots or other baits are placed inside, the appliance thrust down in the soil, and drawn out with a wire handle provided for the purpose. Vote of thanks.

FLORAL COMMITTEE.—Present: W. Marshall, Esq. (in the chair), Rev. H. H. D'Ombrian, Messrs. J. Fraser, O. Thomas, H. Herbst, R. Dean, H. B. May, J. H. Fitt, G. Stevens, W. C. Leach, C. F. Bause, C. Jeffries, J. Jennings, P. Barr, G. Nicholson, J. Walker, C. E. Pearson, C. J. Salter, E. Beckett, H. J. Jones, H. Cannell, T. Baines, R. Owen, J. T. Bennett PC, G. Paul, H. Turner, G. Gordon, and H. Selge Leonard.

Mr. Sturt, gardener to N. L. Cohen, Esq., Round Oak, Englefield Green, staged two magnificent baskets of *Freesia refracta alba*. The plants, in 48-pots, were perfect examples of high culture (silver Flora medal). Messrs. E. D. Shuttleworth & Co., Albert Nurseries, Peckham Rye, arranged an effective group of foliage and flowering plants, prominent in which were some excellent pots of Lily of the Valley. The same firm also showed specimens of Palms grown in an ordinary sitting-room, and which formed an interesting and instructive exhibit (silver

Banksian medal). A grand collection of Amaryllises was shown by Mr. Perkins, gardener to the Hon. W. F. D. Smith, M.P., Greenlands, Henley-on-Thames, and also a handsomely flowered specimen of *Dendrobium Cooksoni* (silver Banksian medal).

Mr. C. Holden, 61, Warwick Road, Ealing, staged a group of foliage and berries, in the arrangement of which much taste was displayed (vote of thanks). Messrs. J. Laing & Son, Forest Hill, exhibited an attractive group of foliage and flowering plants, amongst the most noticeable of which were Crotons, Anthuriums, Cyclamens, Orchids, and Palms (silver Flora medal). Mr. W. Stevens, gardener to W. Thompson, Esq., Walton Grange, Stone, showed plants of *Eucharis Stevensi* in fine condition. Mr. T. W. Whillans, gardener to the Duke of Marlborough, Blenheim, received awards of merit for Carnations John Peter Rugus and Sir H. Calcroft, which are described below. Messrs. Sutton & Sons, Reading, exhibited a basket each of *Primula sinensis* Moss Curled Double Lilac, a charming variety, P. s. Moss Curled Fern-leaf, a variety with beautifully curled leaves and single white flowers, and P. s. Moss Curled double alba magnifica, a dwarf growing kind with white flowers slightly tinged with rose. Messrs. H. Cannell & Sons, Swanley, Kent, showed some splendid Primulas, amongst the best of which were Canterbury, Invicta, My Favourite, Swanley White and New Pink (bronze Banksian medal). Messrs. J. Veitch & Sons, Chelsea, staged an excellently grown plant of *Balanium* (Dicksonia) culcita. Mr. Robert Owen, Maidenhead, staged some fine Chrysanthemums, the best blooms being New Year's Gift, Good Gracious, and W. G. Nevill.

ORCHID COMMITTEE.—Present: H. J. Veitch, Esq. (in the chair); Dr. Masters, Messrs. J. O'Brien, S. Courtauld, E. Hill J. Gabriel, H. Chapman, J. Douglas, W. Cobb, W. H. White, W. H. Protheroe, T. Statter, T. W. Bond, H. Ballantine, A. H. Smee, H. M. Pollett, De B. Crawshaw, T. B. Haywood, and R. B. White.

Messrs. Sander & Co., St. Albans, exhibited a large group of all the finest varieties of the white *Lælia anceps*, including L. a. Schröderiana and L. a. Sanderiana, with about 250 large and splendidly formed blossoms; one spike had six blossoms, and another on the same plant five blossoms. One plant carried sixty blossoms. Besides those mentioned were the unique variety L. a. Ashworthiana (first-class certificate), L. a. Hollidayana, and others. Messrs. Sander also had some splendid *Cypripediums*. Among these were C. Lathamianum, C. Calypso, Oakwood var., and C. Godseffianum. An award of merit was adjudged for *Calanthe-Phaio Arnoldia*, a beautiful bigeneric hybrid, shown by the same firm, to whom a silver-gilt Flora medal was recommended. Norman C. Cookson, Esq., Oakwood, Wylam-on-Tyne, sent several good *Calanthes*, and obtained awards of merit for C. William Murray and C. Bryan. These are described below. J. Crispin, Esq., Chester Park, Fishpond, Bristol, sent a box of cut *Cypripediums*, comprising many of the best forms in cultivation (bronze Banksian medal). Sir Trevor Lawrence, Bart., Burford Lodge, Dorking, had an interesting group of *Dendrobiums* and other Orchids (silver Banksian medal). An award of merit was given for *Dendrobium Hebe*, which is referred to elsewhere. Botanical certificates were awarded for *Epidendrum polybulbon*, a miniature species, and for *Mormodes Rolfei*.

A. H. Smee, Esq., The Grange, Wallington (gardener, Mr. G. W. Cummins), sent a fine spike of *Odontoglossum ramosissimum*, and G. H. Goulten, Esq., Somerset Villa, County Park Road, had a dark *Cypripedium* named C. Goultenianum. T. Statter, Esq., Stand Hall, Manchester, sent some *Cypripediums*, and *Calanthe Florence* was shown by Mr. J. Fitt, Welwyn, Herts, and for which an award of merit was adjudged. A. J. Hollington, Esq., Forty Hill, Enfield, staged some *Cypripediums*, and a few fine spikes of *Lælia anceps* came from W. H. Evans, Esq., Forde Abbey, Chard. A splendid spike of *Cyperorchis elegans*, and some of *Bulbophyllum comosum* came from the Royal Botanic Gardens, Glasnevin. R. J. Measures, Esq., Cambridge Lodge, Camberwell, staged a large collection of *Cypripediums*, for which a silver medal was recommended. Messrs. B. S. Williams & Son, Upper Holloway, also had *Cypripediums* in splendid condition, the fine C. Pitcherianum, Williams' var., being particularly good (silver Banksian medal). W. Thompson, Esq., Walton Grange, Stone, sent a plant of *Odontoglossum Rossi majus Stevensi*, a very fine form. C. W. Finckens, Esq., Hoyland Hall, Barnsley, had some *Odontoglossums* and a good variety of *Lælia anceps Schröderiana*.

Messrs. J. Veitch & Sons, Royal Exotic Nursery, Chelsea, staged a small collection of *Cypripediums* and *Dendrobiums*. A first-class certificate was awarded for *Cypripedium* × *Morgania Langleyense*. A similar honour went to Messrs. Veitch & Sons for C. Adrastus, which is described below. F. Wigan, Esq., Clare Lawn, East Sheen, S.W. (gardener, Mr. W. H. Young), secured a first-class certificate for a plant of the beautiful *Dendrobium atro-violaceum*. Messrs. Hugh Low & Co., Clapton, sent an interesting group of Orchids, and a silver Banksian medal was recommended.

CERTIFICATES AND AWARDS OF MERIT.

Calanthe Bryan (Norman C. Cookson, Esq.).—A distinct hybrid with a fine spike of flowers. It is the result of a cross between C. vestita rubro-oculata and C. Williamsi. The flowers are creamy white with a rich purplish crimson centre (award of merit).

Calanthe-Phaio Arnoldia (F. Sander & Co.).—This is a pretty bigeneric hybrid, being the result of a cross between *Calanthe Regnieri* and *Phaius grandiflora*. The sepals and petals are tinted terra cotta suffused pink, and the lip is a charming pale rose shade (award of merit).

Calanthe Florence (J. H. Fitt).—A fine hybrid from C. Bella and

C. Veitchi. The flowers are deep pink suffused with white, and very pretty (award of merit).

Calanthe William Murray (N. C. Cookson, Esq.).—This is the result of a cross between C. vestita rubro-oculata and C. Williamsi. The sepals and petals are white, the lips being a deep pink, with a rich crimson centre (award of merit).

Carnation Sir Henry Calcroft (T. Whillans).—A splendid bloom, of good form, and dark red colour (award of merit).

Carnation John Peter Rugus.—A bright red flower of medium size, faintly scented (award of merit).

Cypripedium Adrastus (J. Veitch & Sons).—A very distinct hybrid, the result of a cross between C. villosum Boxalli and C. Lceanum. The upper sepal is white at the tip, with a green base, the whole being spotted brown. The petals and lips are shiny reddish brown and yellowish green (first-class certificate).

Cypripedium × *Morgania Langleyense* (J. Veitch & Sons).—A fine variety, the parents being C. Stonei platytanum and superbiens, the first named of which it resembles (first class certificate).

Dendrobium atro-violaceum (F. Wigan, Esq.).—A beautiful species that attracted much notice. The plant shown bore two spikes of bloom, one carrying eight flowers. The sepals and petals are pale yellow spotted brown, the lip being green and rich violet (first-class certificate).

Dendrobium Hebe (Sir T. Lawrence).—A pretty hybrid, the parents being D. Findleyanum and D. Ainsworthi. The sepals and petals are creamy white, tipped and veined rosy lilac. The lip is pale yellow, with a deep violet blotch in the throat (award of merit).

Lælia anceps Ashworthi (F. Sander & Co.).—This is a very distinct and beautiful variety. The sepals and petals are white, the latter being very broad, while the lip is white spotted violet. The throat is veined violet and yellow (first-class certificate).



THE WEATHER IN LONDON.—During the past week the weather in the metropolis has been exceptionally mild, contrasting greatly with the previous week. Bright sunshine prevailed on some days, whilst on others, including Sunday, much rain fell. Monday and Tuesday were fine, but Wednesday opened dull, and at the time of going to press it is raining.

— WEATHER IN THE NORTH.—In marked contrast to that of the preceding, the weather of last week has been throughout unseasonably mild. The rapid thaw which set in on the 9th soon dispersed the snow. Since then high southerly and westerly winds have prevailed and a good deal of rain has fallen. The 12th was a fine day, and Sunday particularly so, both day and evening. On the morning of Monday there was a very slight touch of frost, the day was drizzly, and the evening very wet. Tuesday morning was showery with high southerly wind.—B. D., S. Perthshire.

— THE COUNCIL OF THE ROYAL HORTICULTURAL SOCIETY.—According to the by-laws of the Royal Horticultural Society three members of the Council now retire, these being Messrs. S. Courtauld, D. Morris, and G. Paul. The Fellows recommended for the vacancies, which will be filled at the annual general meeting to be held on February 13th, are Sir Alex. J. Arbuthnot, K.C.S.I., Sir John Edwards Moss, Bart., and Mr. Chas. E. Shea. The following gentlemen are recommended by the Council as officers:—President: Sir Trevor Lawrence, Bart. Treasurer: Mr. Philip Crowley. Secretary, Rev. W. Wilks, M.A. Auditors: Messrs. Harry Turner, Henry Williams, and A. H. Pearson.

— DEATH OF MR. WILLIAM INGRAM.—With regret we record the death of Mr. W. Ingram, the well-known gardener at Belvoir Castle, Grantham, which took place on the 9th inst. Mr. Ingram was born in 1820 at Frogmore, where his father had charge of the Royal Gardens, and was therefore in his seventy-fourth year. Whilst a youth he had the management of the famous Vine at Cumberland Lodge. In 1846 he went to France for the sake of learning the language, and of attending the lectures of MM. Milne-Edwards, Brongniart, and Adren de Jussieu. Returning to England, he was appointed to take charge of the gardens at Hatfield, and in 1853 he proceeded to Belvoir Castle. Mr. Ingram made Belvoir famous by the spring flower gardening which has been extensively conducted for a number of years. The position, the lower part of the slope of a bold tree-clad eminence, was an ideal one for spring gardens, and it was turned to the best account by the genuine gardener

who has passed away. Thousands of tourists annually visit Belvoir to admire the work of one who will long be remembered in the gardening world. The funeral took place at Knipton on Saturday last.

— **DEATH OF DR. T. GRAVELEY.**—Another of our old and much-respected friends has passed away, after only four days' illness. The deceased was seventy-six years old, and had practised as a surgeon for upwards of fifty years. His funeral on Wednesday last week was well attended by most of the leading gentry and tradesmen of the neighbourhood. Dr. Graveley's chief hobby was Rose-growing, and a few years ago he was one of our foremost exhibitors. He was also for many years the local secretary of the National Rose Society in the district in which he resided—Cowfold, Sussex.

— **BULLFINCHES AND TRAP CAGES.**—A correspondent a few weeks ago asked for information on this subject. It is too late to expect to do any good in catching these birds this winter, as they pay a deaf ear to the call birds. From July to December they are easily trapped. The trap cages I use are home-made, different to any I ever saw at bird cage dealers, and more substantial, as I have used one constantly for twenty years at least, in which hundreds have placed themselves out of harm's way as regards fruit buds. I have noticed a great scarcity of these birds this winter.—J. HAM.

— **LAWN MOWING MACHINES.**—We are requested to state that the London Branch of the Chadborn and Coldwell Manufacturing Company, which has hitherto been carried on at 223, Upper Thames Street, E.C., under the management of Mr. Thomas Clarke, has been transferred to the London Excelsior Company, who will hold the sole agency in the United Kingdom for the patent "Excelsior" and "New Model" Lawn Mowers. The new Company will continue to keep a large and well-assorted stock of mowers and wearing parts. Although relinquishing the active management of the London business, Mr. Clarke still retains his position as officer of the Chadborn and Coldwell Manufacturing Company.

— **FRUIT PACKING FOR VILLAGERS.**—The Britannia Fruit Preserving Company, Limited, write:—"We wish the technical classes would instruct the poor in basket making. There would not be so many out of work in the rural districts if the men learnt to make the baskets which are annually required in every market. The new shape which is favoured in Covent Garden for Strawberries and Grapes is ordered by fruit growers from France in thousands. We have lately received some of these, and can give the dimensions. To hold 12 or 14 lbs. of Strawberries (according to ripeness), inside measure at top 16½ inches long, 9¾ wide, 4¾ deep, rounded ends; to hold about 20 lbs., 17½ by 10½ by 6¾. Osiers are easy enough to grow. Cuttings should be put into the ground immediately, just as for Currant or Gooseberry bushes, and next autumn removed to a watery soil. They are 'cured' by placing them in pits with water and lime to take off the bark."

— **GARDENERS' ASSOCIATIONS.**—The numerous reports of the proceedings of these various bodies that are continually published in the *Journal of Horticulture* show how great a force for good these bodies are becoming in relation to gardening and its education. Very soon, indeed, shall we be surprised to learn that any considerable centre of gardeners exists where there is no such mutual improvement association. Perhaps we may yet even get further, and find employers insisting on their employes being members, at least so far as may be practicable. Gardeners may well learn that gardening has its practical and its literary aspects. The merely practical man may have very good rule of thumb practice, but he cannot be an intelligent, broad-minded and capable man in the same way—that is, one who, in addition to being essentially practical, also enlarges his knowledge through the aid of mutual instruction and sound reading. Gardening is one of the most intelligent of vocations; there is not, cannot be, hardly any kind of vocation so poorly paid that demands from its workers so much of knowledge that is both practical and theoretical as gardening does. In a really bright, energetic, capable, intelligent man we find the worker of perhaps the highest order in mental capacity to be found in any vocation. It is with a desire to see the entire profession lifted up to this higher order of gardening, that it seems so desirable we should not only have gardeners' associations everywhere, but that active association with them should be regarded as essential to good gardening status. There is, too, about gardeners' associations an element of sociability that should have full consideration. The man who declines to meet his fellows of the craft in common union is a weak one at the best. Happily, gardening is little troubled with that class of workers.—A. D.

— **GARDENING APPOINTMENTS.**—We understand that Dæpdene, Dorking, has been leased to Her Grace, Lily, Duchess of Marlborough, and that Mr. Chamberlain, foreman to Mr. Whillans at Blenheim Palace, has been appointed head gardener. Mr. W. Burke, for six and a half years foreman at Hornby Castle, Lancaster, has been appointed as head gardener to Sir F. C. Hunloke, Bart., at Wingerworth Hall, Chesterfield, Derbyshire.

— **SOWING SWEET PEAS.**—If not done in the autumn a sowing of Sweet Peas in pots should now be made. By doing so a great gain is effected, for should we have an unfavourable summer, or if the flowers are desired early, this sowing is a great advance on the outdoor one. Have good loam, leaf mould, and a little manure all thoroughly mixed. Fill some 4-inch pots with it, and sow about a dozen seeds in each pot. A vinery just started or any warm house will soon cause the seed to germinate, and when the plants are well through the soil remove to a cool frame. Take the first opportunity to plant them outdoors.—R. P. R.

— **A GIGANTIC LILY.**—At a meeting of the Royal Botanic Society, held at the Gardens, Regent's Park, on Saturday, the 13th inst., Mr. Granville R. Ryder in the chair, it was reported that, among the donations for the Museum lately received was a fasciated or monstrous flower spike of *Lilium longiflorum*, which had borne the remarkable number of 181 perfect flowers. The stem of this Lily, clothed with normal leaves, spread out at the top into the shape of a fan 14 inches in diameter, and the flowers were arranged in a waved line extending along the summit. It was sent from Bermuda, where this species is grown for its bulbs in fields, by Mrs. Hadlow, a corresponding member of the Society.

— **VEITCH MEMORIAL MEDALS.**—At a meeting of the Veitch Memorial Trustees, held on Wednesday, 17th inst., large silver medals were awarded to Colonel R. Trevor Clarke, of Welton Place, near Daventry, for his life-long labours in the advancement of scientific horticulture; to Mr. Charles Moore, of the Botanic Gardens, Sydney, New South Wales; to T. Francis Rivers, Esq., of Sawbridgeworth, for his services to horticulture in the raising of new fruits and the development of modern fruit culture; to Mr. George Nicholson, of Kew Gardens, for his labours in plant culture and garden literature; to Mr. Adolphus H. Kent, of Chelsea, for his valuable treatises on the Coniferae and his Manual of Orchidaceous plants; and to Mr. J. Martin (Messrs. Sutton & Sons, Reading), for his success in hybridization and cross-breeding of various genera of plants.

— **SWEET PEAS TRAVELLING.**—Mr. W. Cuthertson of Messrs. Dobbie & Co., Rothesay, writes:—"I will tell 'Subscriber' (page 28) how Sweet Peas travelled to meet me at various centres in England last summer. My firm exhibited at many of the principal exhibitions in London, and being resident at a Hampshire place, I used to go up and meet the exhibits and stage them. Sweet Peas always formed a primary feature of the exhibits. The flowers were gathered at Rothesay on the morning of the day preceding the Show, and made into sprays with a little damp moss round the stems. They were packed into wreath boxes with tissue paper, and had to leave Rothesay at 2.40 P.M. to catch the limited mail from Glasgow at 5.50. They reached London next morning—the morning of the Show—and invariably turned out fresh and bright. Of course some care was taken at Rothesay to pick fresh flowers, but beyond that nothing more was done than I have detailed. The boxes were booked at Glasgow as ordinary parcels, and were received at Euston about 8 o'clock the following morning."

— **EASTBOURNE HORTICULTURAL SOCIETY.**—There was a good attendance at the annual general meeting of this Society, which took place at the Natural History Society's room, Lismore Road, on Monday evening, 8th inst. Mr. F. Pike, the Hon. Treasurer, in making a financial statement, said the honorary and ordinary members' subscriptions for the year had amounted to £94 12s. 6d.; that £12 13s. accrued to the Society from the Spring Show at Devonshire Park, and £10 5s. 5d. from the Chrysanthemum Show. The balance in hand, after the payment of the usual expenses, was £19 8s. 8d. Mr. E. A. Newman, the Secretary, in reporting on the proceedings of the Society for 1893, said there were 105 honorary members and sixty-four ordinary members, of whom seventeen honorary and thirteen ordinary had been elected during the year. Some of the old members, however, had declined to continue their subscriptions. Of the two shows, that in May, when there were 209 entries, was considered the best the Society had ever held. For the Chrysanthemum Show there were 225 entries, and the medal of the National Chrysanthemum Society was won by Mr. J. Carpenter with four specimen plants which were the best ever exhibited in Eastbourne.

— A BOTANIC garden and arboretum has been established at Buenos Ayres by M. C. Thays.

— PROFESSOR G. SCHWEINFURTH has started on his third botanical exploring visit to the Italian colony of Eritrea, on the Red Sea.

— PROF. F. DELPINO, of Bologna, has been appointed Director of the Botanic Garden at Naples, and Professor of Botany in the University.

— PRESENTATION TO MISS SANDER.—On the occasion of the marriage of Miss Sander, the staff of Messrs. F. Sander & Co., St. Albans, presented her with a handsome ornamental bronze-mounted clock, with the following inscription—"Presented to Miss Sander on her marriage by the employés of F. Sander & Co., with hearty good wishes from all. Wednesday, January 17th, 1894."

— BRIGHTON AND SUSSEX HORTICULTURAL SOCIETY.—We are requested to announce that the dates of the Brighton and Sussex Horticultural Society for the current year are as follows:—Spring Show, April 3rd and 4th; summer Show, August 28th and 29th; Chrysanthemum Show, November 6th and 7th. Mr. M. Longhurst, 18, Church Road, Hove, is the Hon. Secretary.

— ENGLISH VEGETABLES IN INDIA.—An Indian paper says:—"We were astonished by the receipt of a cumbersome and weighty parcel by rail recently, which on being opened proved to be an immense Cabbage, the like of which we had never seen before. A letter received during the day explained matters. The Cabbage had been sent us by Mr. W. H. Hawkes, P.W.D., and grown in his garden in Nuwara Eliya. It was as well grown a specimen of the Cabbage tribe as we remember to have seen anywhere, weighing 21½ lbs., and having a splendid heart, and a stalk like the stem of a tree: No one can say after this that Cabbages cannot be grown to perfection in Nuwara Eliya, given such care and attention as Mr. Hawkes bestows upon his garden. The Cabbage was 49 inches in circumference!"

— CAULIFLOWERS.—Rarely have there been seen such an abundance of Cauliflowers right up to the very last days of the year as found this present winter. It may be that the somewhat sharp hoar frost of the morning of Dec. 31st settled effectually what plants still stood till then unharmed, but there could have been very few then uncut. We get Cauliflowers and Brocolis from some source or other all the year round, but to have an abundance of Autumn Giant, white heads as the market men term them, right up to the end of the year is indeed a novelty. We owe the autumn drought something for this result, as that kept the Cauliflower long in starting into growth; and we also owe the wonderfully open early winter something, as but for this mildness many of the plants would never have headed in at all. After all, autumn Cauliflowers have proved to be unusually good and profitable.—D.

— PRODUCTS OF THE BRITISH HONDURAS.—An exhaustive report on the present condition of the colony of British Honduras, prepared by the Governor, has recently been issued by the Colonial Office. In this it is stated that the products of cultural industries, still really in their infancy, are chiefly Bananas, Plantains, Cocoa-nuts, Coffee, Henequen, Indian Corn, Limes, Mangoes, Sour and Sweet Oranges, Pine Apples, Avocado Pears, Rubber, to which there should be added in time Annotto, Cacao, Coir, Ground Nut, Indigo, Jute, Pita, Ramie, Spices, Vanilla, and doubtless other promising marketable commodities. To the small extent to which the Banana has been successful to the north of the frost line referred to, where it will always be a precarious crop at best, it has proved inferior in quality to the West Indian and Central American fruit. Whilst in 1879 it did not appear among our records its exports were represented by 72,436 bunches in 1891. The Plantain is a staple of food over a large section of Negroland in West Africa. The descendants of its interesting people to the North of the Gulf of Mexico represent a consuming power of probably 9,000,000. Tons of this fruit from Cuba and elsewhere meet with a ready sale in Florida. This Colony's shipments to New Orleans rose from 50,000 Plantains in 1879 to 1,580,200 in 1891.

— PINE PRODUCTS.—The native Pine is estimated to cover a third of the Colony, or 1,613,136 acres, and to average 100 trees per acre on our great southern Pine-ridge. Its wood is said to almost equal that of the Yellow Pine of the United States, which in the beginning of 1888 was reported to have been nearly worked out, and might, in part, have to be replaced by the local Pine. The growth on the older Pine-ridges of the Colony may, when opened up, prove of sufficient age and diameter to make it worth while to have attention turned to adding this timber to our exports, as can doubtless be done with many other valuable woods as yet unknown.

— A NEW PARK FOR SWANSEA.—We understand that the Earl of Jersey has presented a site for a public park to the town of Swansea. The land is estimated to be worth £10,000.

— SERICOGRAPHIS GHIESBRECHTIANA.—"W. D." remarks that this plant is worthy of notice and of easy culture, readily rooted from cuttings in an intermediate house. When coming into flower the plants should be removed to a cool house, or the flowers so soon drop. The colour is a bright rosy scarlet, and the plant can be grown year after year by keeping it cut back.

— LINUM FLAVUM, our correspondent observes, is another excellent winter blooming plant, requiring similar treatment to the former, and blooming in a cool house. A number of plants of each may now be seen in bloom in the show house of the Birmingham Botanical Gardens at Edgbaston, and are most effective amongst Bouvardias, Cyclamens, Cinerarias, and many other plants in flower there.

— THE DEVON AND EXETER GARDENERS' MUTUAL IMPROVEMENT ASSOCIATION.—There was a large attendance of the members of this Association at the Guildhall, Exeter, on the 10th inst., when Mr. G. Anning, gardener at Ford House, Alphington, read an interesting and practical paper on "The Strawberry and its Culture." Mr. Meyer presided, and the audience appreciated the essayist's remarks.

— PHRYNIUM VARIEGATUM.—The pretty little stove plant known by this name, and figured in the *Journal of Horticulture* (p. 27), is a variegated form of the well-known Arrowroot plant, and is called *Maranta arundinacea variegata*. Its history, so far as it is known, was given by Mr. Ridley, Director of the Gardens and Forest Department at Singapore, in the "Gardeners' Chronicle" for 1891, vol. ix., p. 73. True Phryniums are quite different in habit; they have no stem, and the leaves spring separately from a creeping rootstock.—W. W.

— SALVIA SPLENDENS BRUANTI.—"H. D." writes:—"Those on the look out for a really good plant capable of supplying beautiful spikes of scarlet flowers throughout November and December will do well to grow this fine Salvia, which is a decided improvement upon the older variety splendens, the flowers being brighter in colour and the habit of the plant much dwarfer, the latter feature rendering it especially suitable for use in small pots. I saw some fine plants of it in the conservatory at Haseley Manor Gardens a few days ago. Cuttings put in from the present time up till May may be grown into large plants by the autumn months. Those intended for flowering in 5 or 6-inch pots should not be inserted till June."

— A MINIATURE CABBAGE.—Our correspondent continues:—"Mr. George Clements, the energetic gardener at Haseley Manor, like most of us, has his favourite miniature Cabbage. Now Cabbages have had a good time of late, so from the charms of a well-stocked conservatory we pressed onward to the Cabbage bed, where we found plenty of firm hearts (like cricket balls) just ready for use, all grown from seeds sown in August, the variety being St. John's Day, which Mr. Clements speaks highly of for coming in quickly at all times of the year."

— FROM HASELEY "H. D." remarks, "We journeyed the most primitive method of locomotion to Wroxall Abbey Gardens, where Mr. G. T. Silver, the genial gardener, grows many plants extremely well. Here again the Cabbage tribe apparently force themselves to the front, for almost the first thing to take our eye in the kitchen garden was a fine bed of Rosette Colewort, in exactly the right condition for use. All who have not grown this old yet popular vegetable should do so at once. Near by stood frames filled with Marie Louise Violets, in the best of health and vigour, flowering splendidly. In the houses were many well grown Cinerarias and Primulas, highly coloured Crotons, large bracts of Poinsettias, luxuriant and well flowered Camellias, as well as excellent bunches of Alicante and Lady Downe's Grapes."

— POTATOES IN IRELAND.—Mr. E. Molyneux writes:—"A note on page 3 of the *Journal*, "E. K." commenting on the scarcity of the Potato patches in Ireland, reminds me of an experience that I encountered when at the Dalkey Chrysanthemum Show in November, and which was unique to me. Prizes were offered in several classes for collections of vegetables. In not one of them was a dish of Potatoes to be found. This to me was an extraordinary omission, and enough to lead to the loss of a prize in England, except under most exceptional circumstances of the good quality of the other exhibits in this particular class. The explanation given by the officials was that Potatoes in Ireland are not looked upon as a vegetable, but as part of the regular diet of the people. Strange as it may seem to an English exhibitor, the occurrence called for no comment there except by myself."

— TORQUAY DISTRICT GARDENERS' ASSOCIATION.—The second annual dinner of the above was held at St. George's Hall, Torquay, on Wednesday, January 10th, when about eighty attended. The Mayor, P. Shrubbs, Esq., presided, Mr. W. B. Smale being in the vice-chair. Several toasts and songs were given, and a very enjoyable evening was spent. The financial position of the Society is excellent, and its membership increasing.

— THE KEW BULLETIN.—We received last week a copy of the "Kew Bulletin" for October and November, 1893, and as usual it contains much useful information. The subjects dealt with include an account of a "Botanical Exploration of Sikkim-Tibet Frontier," "Poling in Agave Plants," "Coffee Cultivation in the New World," "Resources of British Honduras," "The Prieto-Fibre Extracting Machine," "Arrowroot," "New Orchids: Decade 7th," "Jarrah Timber," and some miscellaneous notes, from which we extract the three paragraphs which follow this one.

— RHUS COTINOIDES.—Several years ago seeds of this rare North American tree were received at Kew from Professor C. S. Sargent, of the Arnold Arboretum. For the first two or three winters the young shoots were badly injured by frost, and the plants had to be sheltered; since then, however, although the growth is not so vigorous as that of its nearest European relative, *Rhus Cotinus*, it seems to hold its own, and proves to be hardy at Kew. The autumnal tints assumed by the decaying leaves are specially brilliant, bright crimson and orange-red. The following particulars are extracted from Professor Sargent's magnificent work, "The Sylva of North America," where the species is figured under the name of *Cotinus americanus*:—"Rhus cotinoides was first discovered by the Englishman Thomas Nuttall in 1819, on the banks of Grand River, a tributary of the Arkansas, within the present limits of Indian territory. Twenty-three years later it was found by Buckley in Alabama, where it grows in a few localities north of the Tennessee River, on the south slopes of the Cumberland Mountains, in the neighbourhood of Huntsville. It also occurs on the Cheat Mountains, in Eastern Tennessee, and in the valley of the Medina River, in Western Texas. In its native habitats it attains a height of 25 to 35 feet, with a trunk 12 to 14 inches in diameter."

— ROBÍNIA HISPIDA IN FRUIT.—This well known shrub, which is a native of the Eastern United States, where it forms in some localities a considerable portion of the underbush, reproduces itself by means of suckers; its fruit being until quite recently almost unknown. Mr. Thomas Meehan, of Germantown, Philadelphia, who has studied the plant in its wild state on the Lookout Mountains, Tennessee, having made extensive inquiries as to the occurrence of seed vessels without success, concluded that, owing to the rapid production of suckers, the seed-producing power had been lost. At length he received two specimens, one of which he generously presented to Kew. The pod, which is rather more than 2 inches long and tipped by a short curved beak, is covered with weak brownish bristles about four lines long, and is slightly constricted between the seeds. Several pods mature on the same raceme.

— OPHIOPOGON JAPONICUS.—Specimens of this plant were recently sent to Kew for identification by H. Labouchere, Esq., M.P. "About the Lake of Como, in many of the villas, they have a sort of grass which they call 'erba japonica.' Its advantage is that it grows thickly beneath the trees or in the sun, and stands the frost. It makes a thick bed, and they use it for borders or for spaces that they wish to cover, in the latter case cutting it short. . . . It seems to me that if it were introduced here it would be useful for gardens and shrubberies. I never saw it except about Como, and I was told that it was introduced there by the Grand Duke of Saxe-Meiningen, who has a villa there." According to the "Genera Plantarum," the name given at the head of these notes is the one which should be employed. It is met with in some French gardens under the name of *Convallaria japonica* (herbe aux turquoises), and in some books as *Flueggia japonica*, the name adopted by Mr. J. G. Baker when he monographed this genus and its allies. In "Garden and Forest" for 1889 Mr. Nicholson, in notes on gardens about Lugano, thus writes:—"As an edging (and a capital one too) for shady walks, and also as a sort of turf covering to the bare ground under the dense shade of trees, *Flueggia japonica* was successfully employed. A pretty little plant, with dark green grassy leaves and blue berries . . . ; there being not many things which thrive under these conditions, it seems desirable to call special attention to its merits." We learn from Kämpfer that it is similarly employed

in Japan and China, and also that the tuberous knobs of the rhizome are preserved in sugar and used medicinally. A figure of the plant is given in the "Botanical Magazine," t. 1063.

— RAINFALL AT SWANMORE, 1893.—The year just past was remarkable for the excessive drought experienced. The average rainfall for this district for the last twelve years hitherto being 30 inches. The last year yielded but 22.08, which is less than any year for the period named. The year 1887 was the lowest previously, 24.55. From March 3rd to May 16th only 0.06 rain fell. When we consider that the land in this neighbourhood received no less than 800 tons per acre below the average the extreme nature of a dry year can easily be appreciated. Another remarkable fact worth mention is that 0.76 inch is the greatest quantity that fell during any twenty-four hours during the year, this occurring July 4th. Such an experience does not occur to me as having taken place before.—E. MOLYNEUX.

— THE RECENT SEVERE WEATHER.—A very remarkable set of figures concerning the weather was issued from the Greenwich Observatory on Tuesday last. It is a commonplace to talk of a great change of weather, but the variations of temperature recently experienced have to be reduced to figures before their true significance can be adequately grasped. The official records show that the lowest reading during the recent frost was no less than 22.4° below the early January average of the past fifty years, the minimum at the Observatory being 12.8°. Twice last week what is technically known as the daily range—that is, the difference between the highest and lowest temperature in twenty-four hours—ran up to more than 16°. Taking the whole seven days these extremes are recorded: highest, 52.1°; lowest, 18.1°; the latter being 17° below, and the former 8° above, the averages of fifty years. Roughly speaking, the mercurial readings in forty-eight hours have ranged from those of severe winter to a temperature for which we might often be grateful in mid-April or early May.

— THE RECENT COLD IN GUERNSEY.—A correspondent writes to a daily contemporary:—"Systematical meteorological observations have been taken in Guernsey during the last fifty years with standard certified instruments, and Friday's, the 5th inst., readings broke the record for low temperature. The mean temperature of that day was 21.9°, which is (excepting Thursday's, the 4th, mean) 5.9° lower than the lowest daily mean previously recorded. The air temperature at 8 A.M. on Friday, January 5th last, was 18.1°, the maximum for the day 26.5°, the 9 P.M. reading 24.8°, and the minimum for the day 16.2°. The mean, as above stated, was 21.9°—that is, no less than 20° too cold for that day of the year. The coldest day on record previous to this cold snap occurred on February 11th, 1870, the minimum for that day being 26°, and the daily mean 27.8°. These local observations were commenced fifty-one years ago by the late Dr. Hoskins, F.R.S., and are now carried on by Mr. A. Collenette, F.R.M.S. The still lower air reading of 16.2° was taken by myself, with a certified instrument in a Stevenson screen, at 8 A.M. on the 5th inst., while the minimum air reading recorded during that night in the same screen was 15.5°. This reading is therefore 0.7° lower than Mr. Collenette's observation. My station, however, is somewhat more exposed than Mr. Collenette's, and some 100 feet higher above the sea. These unprecedented low temperatures, in an island with a climate generally so mild, are, I think, worthy of record."

— THE WEATHER.—If the recent severe weather has excited so much interest that notes from various parts of the country are numerous, what will be said of the present condition of temperature, the sun shining out almost hotly (January 12th), really more like an advanced April day than January? It is literally a transformation from an arctic to a temperate clime, and all within a few days. No wonder foreigners find it difficult to understand that meteorological puzzle—the British climate. But in this remarkable versatility also do we find so much of that atmospheric training, the which befits the British race for colonisation as successfully in torrid Africa or in arctic Canada. To us as gardeners, however, these varying and considerable variations of temperature are of grave concern. We have to be prepared for everything possible in our range of island weather. The present spring-like warmth, so soft, pleasant, yet so unseasonable, is eminently calculated, because of the great reaction that invariably ensues after extreme cold, to promote abnormal and most undesirable tree development. In nothing have we so much to fear as in relation to our fruit crops. Long experience of the effects of these mild winter spells have taught us that they are fraught with danger to bud and bloom. We would so much prefer that all buds should remain inactive for the next two

months, because in that way comparative immunity from frost or too precocious development would be ensured. Now there is no telling what may happen, and no human agency can check the precocious tendencies of a warm winter. We may hope that things may come right in the end, but know that greater than hope in effect would be a good spell further of low temperature.—A. D.

— INSECT ATTACKS ON CROPS AND TREES.—Miss E. A. Ormerod contributed to the "Times" recently some observations on insect attacks upon crops and trees in this country during last year. It is pointed out that the attacks of the year were much influenced by the exceptional deficiency of rainfall in the early half of 1893, from March onwards, and by other weather peculiarities. With regard to the imported locust appearances, the specimens which reached her alive proved to be of a South European species, which is not gregarious, and in its own country, though of large size, is known to do no appreciable damage. From the climatic requirements of locusts, therefore, and also from recorded experience, there does not appear to be any reason to fear even a possibility of locusts effecting a settlement in this country. It is mentioned by Miss Ormerod, however, that the presence of locusts in great quantities in fodder might be detrimental to the health of animals fed upon it.

— EFFINGHAM GARDENERS' IMPROVEMENT SOCIETY.—On Thursday last a general meeting of gardeners was convened for the purpose of forming the Effingham and District Gardeners' Mutual Improvement Society, for the discussion of various subjects in connection with garden work. Mr. Douglas presided, and there was a good attendance. The following officers were elected:—President, F. Muir, Esq. Vice-Presidents, Rev. P. P. Edwards, M.A., Rev. E. F. Bayley, M.A., Messrs. Douglas, Alderman, and Bristol. Committee, Messrs. Bellwood, H. Goff, Hamlin, Jones, Phillips, Muckley, King, Franks, and Ottaway. Treasurer, Rev. P. P. Edwards, M.A. Secretary, W. R. Goff. The meeting closed with a hearty vote of thanks to F. Muir, Esq., for his kindness in granting the room for the meetings, and also to Mr. Douglas for presiding and assisting with his valuable advice. The establishment of this Society is the outcome of lectures given under the auspices of the Surrey County Council, and which were highly appreciated.

— INFLUENCE OF ARTIFICIAL RAIN ON PLANTS.—Professor J. Wiesner, who has recently been studying the influence of artificial rain upon European and exotic plants, gave an account of his results at a recent meeting of the Vienna Academy. Some of the plants, called by Professor Wiesner "ombrophobe," can only for a short time stand continuous rain, and soon shed their leaves and decay. Others, called "ombrophil," can stand it for months together. Plants growing in dry places are, says "Nature," as a rule, ombrophobe, but the reverse cannot be said of plants growing under wet surroundings. Leaves appear to gain in power of resisting rain as they develop, and to reach a climax in this respect at the period of their greatest vital activity, after which they lose much of that power. Leaves which can be wetted by water are usually ombrophil, those which cannot are usually ombrophobe, but in cases where leaves are both ombrophobe and easily wetted, they are extremely sensitive to rain. Professor Wiesner thinks that ombrophobe leaves are enabled to resist the putrefactive action of water, especially at high temperatures, by certain antiseptic substances which they contain. The same may be said of hydrophil roots and submerged parts of aquatic plants.

— LECTURES AT THE DRILL HALL.—The lectures arranged to be given at the meetings of the Royal Horticultural Society during the current year are as follows:—March 13th, "The Deciduous Trees and Shrubs of Japan," by Mr. J. H. Veitch; March 27th, "Rare Trees and Shrubs in the Arnold Arboretum, U.S.A.," by Mons. Maurice de Vilmorin; April 10th, "Hybrid Narcissi," by the Rev. G. Engleheart, M.A.; April 24th, "Botanical Exploration in Borneo," by Mr. F. W. Burbidge, M.A.; May 8th, "Orchids," by Sir Trevor Lawrence, Bart., President R.H.S.; June 12th, "Flowering Trees and Shrubs," by Mr. G. Nicholson; June 26th, "The Fertilization of Pansies," by Mr. J. D. Stuart; July 10th, "On Cactaceæ," by Mr. John W. Singer; July 24th, "Filmy Ferns," by Mr. J. Backhouse; August 14th, "Fruit Culture in France," by Mons. Chas. Baltet; August 28th, "Relations between Gardeners and their Employers," by Mr. Malcolm Dunn; September 11th, "Lord Bute's Vineyards," by Mr. A. Pettigrew; October 9th, "How to Popularise Orchid Growing," by Mr. E. H. Woodhall; October 23rd, "Origin of Common Vegetables and Their Value as Food," by Professor G. Henslow, M.A., F.L.S., &c.; November 13th, "Chrysanthemums," by Mr. C. E. Shea; November 27th, "Principles of Judging at Flower Shows," by Mr. Jas. Douglas.

— POLYPODIUM VULGARE.—Whilst reading Mr. Druery's interesting notes on the Polypodium family (page 6), I was reminded of how this Fern may become a decided novelty and ornament at the same time, as well as showing how little are its wants in the way of soil or moisture to enable it to make luxuriant growth. In the woods forming part of the Rooksbury Park estate there are several Oak trees on which for 30 feet up the stem and on large branches this Fern has taken a firm hold. There it is growing in all luxuriance in spite of the abnormally dry summer of last year. The roots appear to derive all the necessary support from the bark of the Oak.—E. M.

— FORCING LILY OF THE VALLEY.—Where this popular flower is extensively cultivated but little difficulty is experienced in forcing the plants, because a bed in a house well supplied with bottom heat is devoted to the purpose. In many instances, however, it is necessary to start a few potfuls at frequent intervals, in order to keep up a continuous supply. Under such circumstances the plants very often do not receive the treatment they require, with the result that failures are by no means unusual. The following plan I have found to be invariably successful. Plunge the pots filled with roots, as they are wanted for forcing, up to the rims in cocoa-nut fibre or moss, then cover the crowns with an inch of moss, and stand the box upon the hot-water pipes in a forcing house or low pit. Give one thorough watering with warm water, and afterwards syringe the moss daily. If the hot-water pipes are kept constantly warm, and a top temperature ranging between 65° and 75° is maintained, no difficulty will be found in securing well developed flowers.—H. W.

DEATH OF MR. WALTER HENRY WILLIAMS.

MR. WALTER HENRY WILLIAMS (head of the firm of Keynes, Williams & Co.) died early on Sunday morning, 14th inst., at Parkhurst, Salisbury, after a short illness, from pneumonia. The regret with which we make this announcement we are sure will be shared by a wide circle of rosarians, dahlia growers, and horticulturists generally; and, indeed, by everyone who has had the pleasure of being personally acquainted with the deceased gentleman, whose courteous, genial, and gentlemanly manner and bearing endeared him to everybody with whom he came in contact.

In Mr. Walter Henry Williams' demise the Wilts Horticultural Society has sustained a severe loss, he having been Hon. Sec. of the Society since it was resuscitated out of the ashes of the "old" Wiltshire Horticultural and Arboricultural Society, some twelve or thirteen years ago, up to the time of his much deplored early death. In this capacity he performed his onerous duties with great tact, and to the entire satisfaction of the Committee and exhibitors, the details of the individual shows having on every occasion been carried out in the smoothest and most efficient manner possible.

The late Mr. Walter Henry Williams was the youngest but one of four sons of the late Charles Williams, Esq., J.P. for the City of Salisbury, in which City he carried on a large malting business, since carried on by the eldest son, Mr. Ernest Williams. It is fifteen years since the late Mr. W. H. Williams became connected with the well-known firm of Keynes, Williams & Co. of the Castle Street, Nurseries, Salisbury. In recent years the deceased took a great interest in the raising of new Dahlias of the single and Cactus types, and also in the showing of their blooms to the best advantage, making a new departure from the beaten track of exhibiting these popular flowers, his most successful attempt in this direction being the arrangement of a collection of cut blooms set out on a table 15 feet by 6 feet, at Shrewsbury last August, and reproduced at the Royal Agricultural Hall, London, a few days later.

Mr. Walter Henry Williams was a Fellow of the Royal Horticultural Society and a member of the Floral Committee of that Society, and the probability is that had he been alive and well he would have attended the first meeting of the Society this year, which, singularly enough, was held on the day on which his funeral took place.

The remains of the deceased were removed from Parkhurst, Salisbury, at 11.30 A.M. on Tuesday, and conveyed by the express (12.30 P.M.) South-Western train to Woking for cremation in that place. The mournful procession was attended by the leading tradesmen of Salisbury, including the Mayor (Mr. Charles Hoskins) and many members of the Corporation, who attended, not in their official capacity, but as members of the Wilts Horticultural Society, and as an individual mark of private citizenship respect for the late Mr. Walter Williams, for whose memory it is pleasant to record, everyone who had known him has a good word. The coffin was covered with beautiful wreaths, including one, "In kind remembrance and deep sympathy from H. W. Ward," and one from the Castle Street Nurseries. Among horticulturists attending the funeral were Messrs. John and Charles S. Wyatt (Castle Street Nursery), H. W. Ward (Longford Castle), Charles Warden (Clarendon Park), Messrs. Hinksman and Chalk (Salisbury), and Mr. H. Nicholson (Assistant Secretary to the Wilts Horticultural Society). The deceased was married about four years ago, and leaves a widow and one child (a boy two years old) to mourn his loss. The deceased gentleman was only thirty-one years of age.

THE FERNERY AT IMPNEY, DROITWICH.

A DISUSED gravel pit, close to the mansion, and surrounded by lofty Horse Chestnut trees, formed a suitable site for a fernery, and in 1890 this handsome building, which is 150 feet long and 60 feet wide, was completed. The fernery is approached by rugged steps, planted with hardy Ferns, Ivies, and other plants. The building is heated by a powerful boiler, which is 150 yards away, and the six 6-inch pipes are hidden by built-up rockwork, of course allowing spaces for the heat to escape into the house. The rocks, caves, steps, and bridges are formed with tufa stone, brought from Matlock Bath, about 200 tons being used. The water, which enters at the north end, forms a dripping cave, and runs in a winding stream the full length of the house, and goldfish luxuriate here.

The picturesque appearance and the absence of studied artificial

lofty spaces, and they are telling objects in the fernery. One is filled with a mass of *Platycerium alcicorne* (the Stagshorn Fern), brought to this country by Lord Somers; another with a monster plant of *Asplenium foeniculaceum*. There are huge masses suspended of *Adiantum cuneatum* 5 feet in diameter, others of *Woodwardias* and other Ferns. One striking basket, suspended in a central position, filled with *Asparagus plumosus*, planted out early in the last year, is 8 feet through, and leading shoots have been trained up the chains, the pyramidal mass being 10 feet high.

The sides of the fernery are now well clothed, a very large number of Ferns having grown from the spores which have fallen from the suspended baskets on the walls, and syringing has been an assistance. With these are *Ficus repens* and other plants, and a large number of the fine-foliaged *Begonias* luxuriate here, adding much to the beauty of the place. At the base of the rockeries are carpets of Lycopods, Maiden-hair and other Ferns. *Adiantum Williamsi* is in fine character here, and a large plant of *Monstera deliciosa* planted out in the rockwork on

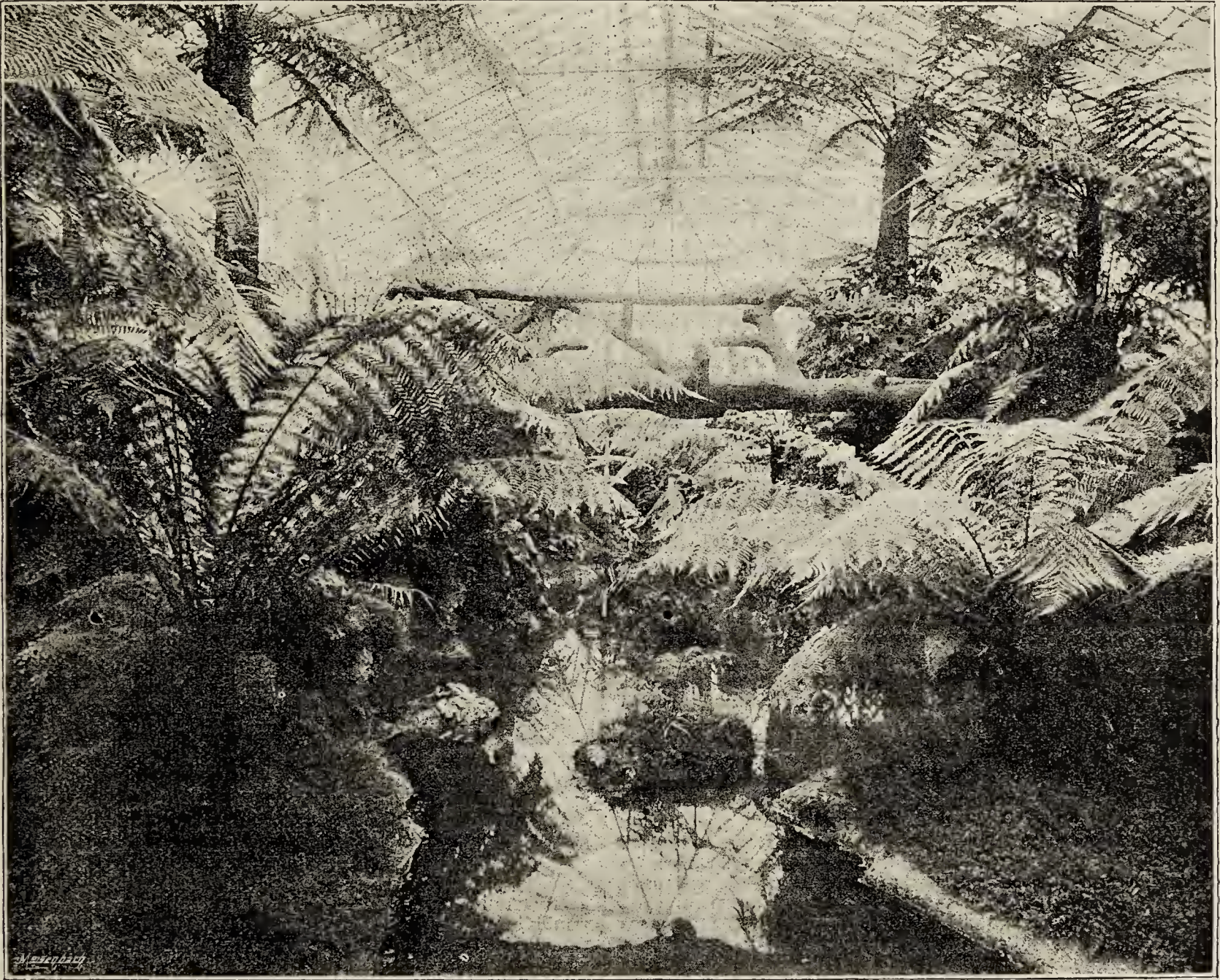


FIG. 8.—THE FERNERY AT IMPNEY.

arrangement strikes one on entering the fernery. Much artistic taste has been displayed in working out the details, the water arrangements being in unison with the whole. When the erection of the building was decided upon, Mr. Corbett imported from New Zealand in 1887 fifty Tree Ferns of various sizes, all of which lived and formed handsome heads. A large group of *Dicksonia antarctica* form a conspicuous object, as also do the others in various parts of the fernery, some of them in elevated positions on the rockeries. It will easily be imagined that with so large a number of Tree Ferns alone, this fernery is bold in design and free from the crowding of rockwork so often met with. A *Dicksonia squarrosa* on a stout stem and in robust health claims notice, planted out on an elevated rockery, and a fine *Dicksonia antarctica* rears its majestic form. Another claimant for notice is a *Todea africana* in admirable health, and although on a trunk only about 2 feet high, is supposed to have existed for 200 years.

Huge wirework and other baskets suspended from the roof are largely used here in places where the Tree Ferns are not occupying the more

the margin of one of the pools has sent its roots down into the water, evidently enjoying its position. The building is lighted by electricity when needed, and there is a passage underground to the fernery from the mansion. The illustration (fig. 8) of the fernery has been reproduced from a photograph taken by Messrs. Bedford, Lemere & Co., 147, Strand, W.C.

Impney well deserves more than a passing notice of its fernery, and it is generally known that fruit cultivation is thoroughly well done here. On the occasion of my visit late in the summer there was abundant evidence of good crops. A large amount of glass is devoted to fruit culture, and plants receive their share of attention. Outdoor fruit culture is also of a superior character, and very few gardens can show finer pyramidal as well as wall trees. Flower gardening likewise has a fair share of attention here, and long broad borders of Roses, the best kinds of herbaceous and other hardy plants, get ample attention. In front of the very beautiful mansion are broad terraces, with massive flights of stone steps leading from one terrace garden to the other.

Impney has perhaps become so prominently known in connection

with Mr. Richard Parker's successes as a successful exhibitor of Chrysanthemums; but for a while at least, if not altogether, he is giving up exhibiting, as his time and attention are now so much required on the estate outside of the gardens. Mr. Parker has also a reputation as a successful exhibitor of fruit, and may he long continue so, and appearances at Impney are in favour of his continuing to be in the front at our exhibitions.

The gardens and pleasure grounds are extensive, the mansion is on an elevated position, and the park and grounds are well wooded, the river Salwart running through it. The terraces are bold and well laid out, and are kept in the best of order, with huge beds of Rhododendrons and other evergreens in masses. In leaving Impney one carries with him that it is a fine place, and takes its position amongst the best gardens of the kingdom.—W. D.

WINTER FLOWERS AT READING.

WHERE an attempt is made to produce a special display of flowers at this period of the year the results are usually of an exceptionally satisfactory character, particularly if judicious management is forthcoming. If not devoid of interest, as they never should be, the majority of outside gardens at least present a desolate appearance now, hence most persons appreciate plants that bloom during the winter, thereby making a show that for brilliancy is perhaps unexcelled at any other time. In many private gardens the efforts made in this direction are worthy of record, but the facilities do not permit of that close attention which is so characteristic of some trade establishments. It is therefore in the latter that we find the best effect, and Messrs. Sutton & Sons, of Reading, must be included in this category. At the nurseries of this well-known firm there is now an exhibition of bloom that is unique, interesting—one might add instructive, inasmuch as the respective plants afford a variation of colour that gives food for thought; and moreover, cultural hints are always derivable from an inspection of such collections of plants.

Taking the Primulas first, one is keeping within bounds in saying that nowhere, perhaps, are these popular winter-flowering plants better represented than at Reading. Careful selection, indefatigable and judicious hybridising, combined with proper management, have been productive of results that are now known throughout the civilised world. The plants are grown in thousands, and a recent critical inspection of the numerous types not only revealed the fact that the Reading Primulas this year fully maintain the good reputation they have long had, but that further progress has been made. By many growers it may be thought well nigh impossible to make very great improvements in the best of the forms now in cultivation, but it would seem that such has occurred. In some cases a fresh break in the foliage takes place, and in others entirely new colours are noticeable. Among the latter is the popular heliotrope shade, which viewed in a mass makes a charming effect. This is a double variety, and one that is destined to become a favourite. Great strides have been made in the purple forms, the best of these being Imperial Purple. The flowers of this are large, double, well formed, beautifully fringed, and are borne in immense clusters on stout stalks that rise as if proud of their distinctiveness. The colour is very striking, being a rich magenta purple, whilst the habit of the plant leaves nothing to be desired. Double Blue is exceptionally distinct, and notwithstanding the great amount of fire heat that it was necessary to employ during the recent severe weather, and which materially affects the blooms, the colour is most intense. Some splendid forms of double whites are conspicuous for their size of blooms, neatness of habit, and floriferousness. The Fern-leaved Double White is a charming plant, the rich green leaves being of exquisite formation and the flowers are freely produced. Double Alba Magnifica is one of the novelties of the year with its splendid fringed flowers, and the Carnation-flaked retains the position it hitherto has held. For effectiveness the double carmine, crimson and scarlet varieties cannot be surpassed, and like all these double forms are invaluable for supplying flowers for cutting. The same may be said of the beautiful salmon rose variety, the flowers of this being a most delicate shade, which harmonizes exquisitely with the white-flowered kinds. Those who are able to take a retrospect of the career of these plants will doubtless agree with the writer that considerable progress has been effected during the past decade or so, and the flower-loving public are indebted to the hybridizers who have so diligently worked to produce such results. These double and semi-double forms bear a favourable comparison with the old-time florists' varieties that were formerly so popular in gardens. These are quite as useful for general decorative purposes and certainly much easier to grow. Under these circumstances it is not a matter of surprise the older kinds have been generally discarded for the newer varieties.

With reference to the single-flowered varieties, these are as equally diversified as the double kinds, and in some respects are more interesting. It is obvious that with these some really remarkable breaks have been obtained. Years of intelligent hybridising of the best varieties has resulted in some extraordinary forms, showing a wonderful distinctiveness in habit of growth, foliage, size of flowers, and in the variation of colour. An effort is being made to obtain a true yellow-flowered variety, but whether such will be secured time only can tell. So far, however, a step in the right direction has been made, and Messrs. Sutton's hybridiser is sanguine enough to anticipate a yellow Chinese Primula in the near future. A few years ago the blue-flowered varieties existed mainly in imagination, but now we have them in reality, the

colours apparently becoming more intense every year. The Fern-leaved Blue, as seen at Reading, is unquestionably one of the best of its class extant, the habit of the plant being dwarf and compact, whilst the flowers are nearly 2 inches in diameter. Snowdrift, another Fern-leaved form, is remarkable for its carliness and free-flowering proclivities, and in the Pearl we have an ideal Primula, the habit of the plant being perfect, and the large white flowers of great substance. Purity is a gem, characterised by its dark Fern-leaved foliage and immense white flowers, the same applying to Gipsy Queen, which has exceptionally dark leaves. Although not new, Ruby King is, perhaps, unsurpassed for colour, the Reading Scarlet also meriting attention in that direction. The pink forms, including Rosy Queen, Brilliant Rose, and Reading Pink, are very pleasing, and extensively grown for the delicately tinted flowers. The foregoing constitute plants that are dwarf and neat in habit, well furnished with robust fresh foliage, and flowers of the best form, size, and substance, comprising amongst the dark kinds the richest colours imaginable, and of whites as pure as snow. With these recommendations they should find a place in every garden, as such plants ought to satisfy the most fastidious; but there are many tastes for which the florists have to cater, and whilst some persons prefer the varieties named, others place size before everything. The latter will find the Giant forms most suitable. These include glowing crimson and pure white flowers of immense size and substance. The plants possess a vigorous habit, and the blooms, many of which measure nearly 3 inches in diameter, are produced on stout stems well above the foliage.

Cyclamens also form a special feature at Reading, and it is obvious that to these Messrs. Sutton & Sons have paid more than ordinary attention. Most of the plants are in 5-inch pots, there being in many cases completely hidden by the mass of foliage, above which rise the beautifully coloured and pure white blossoms. Being grown mainly for the production of seed, as are the Primulas, the plants are arranged in sections, each colour having a separate position. Hybridising is persistently carried on with the object of effecting improvements, as well as procuring new breaks, and each year brings forth its novelties. The latest include a charming variety named Salmon Queen, which will probably create a sensation when put in commerce. The flowers, as indicated, are of a beautiful salmon pink tint, quite unique in its way. Giant Cherry Red is also a new colour among Cyclamens, being very brilliant, and one destined to become a popular variety. Giant White when well grown is a magnificent plant, the flowers being large and of the purest whiteness, produced on stems that need no support. The same remark applies to crimson, purple, and rose-coloured forms of this section, which for general use are perhaps unsurpassed. Apart from the beauty of the enormous flowers, the leaves are most attractive, being large, of great substance, and beautifully marked. For richness of colour Vulcan is a variety that has for some years occupied a foremost position, the flowers being a very deep crimson shade. In comparison with this the chaste form known as White Butterfly shows up well, and by many growers is considered one of the finest pure white Cyclamens extant. The Mixed Prize strain is also worthy of note, comprising a selection of the best types in cultivation.

There are other winter flowers at the above mentioned nurseries, including a number of the new Streptocarpus Wendlandi. Dwarf Cannas, too, are in bloom, and it may be interesting to say that these plants were lifted from the open ground in the autumn, placed in pots in a comparatively warm house, with the result that they continue to produce spikes of showy flowers. Selections of Roman Hyacinths are also on trial for the purpose of securing the best forms only, the same applying to Lily of the Valley and other winter flowering plants, including the magnificent Cinerarias which are now expanding their beautiful blossoms.—C.

TOMTITS IN THE GARDEN AND ORCHARD.

NOTICING the remarks of "A. L. B." on page 28, I consider it would be more definite and satisfactory to name the individual species which take the fruit buds in Lanarkshire. Here we have four species which would be called "tomtits" by some persons—viz., the great tit, blue tit, cole tit, and marsh tit; but the one most commonly referred to and understood by that name in this locality is the small blue tit (*Parus cœruleus*). Tits abound in my garden and orchard. I know their usefulness, and encourage them to the fullest extent to build, and shelter them in my old boots, tin teapots (one of these has had scores reared in it, besides several broods of wrens, which I mention for the interest of young readers of the Journal), and boxes.

It certainly is not in a cavilling spirit that I wish to dispute "A. L. B.'s" observations, but I have just as much right to believe in the innocence of the birds in this respect in my garden, after watching them closely for some fifty years, as "A. L. B." has in recording their destructiveness in his. I have no power to appoint "a commissioner" to "examine and report" on the tits in Lanarkshire; neither can I pay a personal visit, much as I should like to shake hands with the writer of so many interesting articles I have read; but to clear up a point I would not hesitate to travel thousands of miles, even to the Antipodes, if "the game was worth the candle."—J. HAM.

BIRDS AND GREEN FLY.

ON page 28 of the *Journal of Horticulture* Mr. Garner gives an interesting note about the wren and green fly. I have noticed this bird, and its relative, the golden crested wren, very busy indeed among green fly during early summer. Four years ago a pair of common wrens built in

our Rose house, and hatched nine young ones. The pair became so tame that no notice was taken of our presence, and it was surprising to note what a number of insects they found upon plants which were apparently clean. They built in a corner, where syringing did not interrupt them, and from the time they were noticed we refrained from fumigation. If we would make greater friends of birds in the houses I believe we might be more exempt from many insect pests. I have had both wrens in my houses, and even that shy little bird, the ox-eye.

Almost all of the hedge-warblers will eat the green fly, and it may interest Mr. Garner to know that I have observed the common house sparrows with their beaks completely full of fly. Last spring, when fly was attacking my Roses in the open, these birds were extremely busy; they did not pick off the fly individually and in the dainty manner the wrens adopted, but seemed to scoop off a number at the time. I have so often watched birds eating green fly from Roses and other plants, that I believe it to be a regular practice with them, and not merely a few isolated instances. Both myself and sister are particularly fond of birds (not in cages), and two years ago she had a pair of golden crested wrens, which would submit to be stroked upon the nest. A pair of the common grey linnets allowed me to do the same. These birds were frequently in our houses, and from their great tameness we had ample opportunities of noting their fondness for green fly.—A. PIPER.

WINTER DRESSING OF FRUIT TREES ON WALLS.

THE present is a good time for disnailing Peach and Nectarine trees, thinning out the old wood, where not done immediately after the crop of fruit was gathered, shortening back the young shoots a little, and then painting any of the trees that were in any way affected with scale or thrip during the summer with a solution composed of the ingredients mentioned below. The branches of the individual trees should then be tied loosely together for safety, and the walls well washed with a solution of freshly slacked lime, into which a little fine new soot and sulphur may be stirred before being well worked into every hole and cranny in the wall so that all insects and their larvæ located therein may be destroyed. In order to make sure of this measure of extermination being effective, the walls should be well syringed with softsoapy water at a temperature of about 150°, and petroleum at the rate of half a pint of the latter to a gallon of the former, before applying the limewash, forcing the mixture well into the crevices and nail holes, spreading a mat or two over the trees to prevent any of the solution getting on them in the process of applying it to the wall.

The fact of being able to gather fruits perfectly free from blemish or insect disfigurement on the wall side of same next summer and autumn will more than amply compensate for the time and labour involved in carrying out the above simple details. Most fruit growers know by experience what feelings of annoyance and regret are aroused in gathering large, handsome, well-coloured Peaches and Nectarines from trees on the open walls on finding a large percentage of the fruit eaten round the stems by woodlice and other creatures that find congenial concealment in the nooks and crannies of the, in many cases, defaced walls.

The mixture that I use as a winter dressing for all kinds of fruit trees (including Vines) that happen to be affected with scale, thrip, red spider, or mildew during the summer consists of about 4 ozs. softsoap dissolved in a gallon of warm water, a similar amount each of flowers of sulphur and finely sifted new soot, and one wineglassful of petroleum, the whole being stirred well together before adding sufficient clay to give the mixture the consistency of thick paint.

Where a number of trees have to be dressed it is better to make a good-sized caskful of the mixture at one time, using the several ingredients indicated at the rate recommended above. I find empty softsoap tins, with a piece of wire put across each for a handle, to be suitable vessels for applying the mixture to the tree from, the improvised paint pots being suspended from the ladder by a short length of wire made in the shape of the letter S. A 7-inch flower pot, with the hole stopped with clay and a wire handle adjusted thereto, will answer the purpose equally well. Each time the pots are being refilled the mixture should be well stirred, repeating the operation occasionally in the process of applying it to the trees. The solution should be applied carefully to every part of the tree, working the brush in an upward direction so as not to knock off or otherwise injure the buds. Stiffish brushes made of matting are useful for applying the composition to the trees.

The branches of the individual trees should be secured loosely to the wall as soon as painted, so as to retard the flowering period, finally arranging and securing all the branches regularly over the wall space allotted to each tree shortly before the flower buds open, allowing a space of about 4 inches between the individual shoots of last year's growth.

There can be no question as to the large per-centage of fruit trees, especially the Morello Cherry, Plums, and Pears, that annually succumb to the ravages of scale and thrip where not dressed in the manner indicated in due time. If a few of the elongated brown scale (*Mytilaspis conchiformis*) once attach themselves to a fruit tree they will, in a very short period of time, if allowed to do so, completely cover the branches, absorb the sap, the very life of the tree, which, in the course of a few years, will dwindle away and die, leaving behind evidence in themselves of neglect and of the enemies' strength.

Hence it is that all our wall fruit trees are looked carefully over every year after they have cast their leaves, and, where necessary, dressed with the mixture indicated and in the manner described above.—H. W. WARD.



CHRYSANTHEMUM MRS. L. C. MADEIRA.

IF I mistake not this was exhibited at one of the fortnightly meetings of the Royal Horticultural Society last year, or very late in 1892. As I then saw it I formed the impression that as a late decorative variety it would be valuable, but as an exhibition flower I feared it resembled Mabel Ward too much in the manner of its floret formation. Types of incurved blooms with very narrow florets are not so valuable to the exhibitor in the present day as those having more substance. These with extremely narrow florets, too, are more liable to come "cross-eyed," which is a defect on the exhibition table.—E. M.

POINT JUDGING.

LIKE many more of your readers I have taken a particular interest in the discussion on judging. After reading the evidence I came to the conclusion that point judging is a mistake. The method may serve a purpose elucidating the abstruse secrets to novices, but never to judges. What is the use of formulating a table of points, then being at the trouble and expense of getting other men to adjudicate on others' opinions? The whole thing is incongruous. I could cite cases where men with no experience whatever had much to say in formulating a table for points in honey. I have judged flowers, fruits, vegetables and honey at local shows, and I have never submitted to judge by the table of points for our guidance. As for judges giving their reasons for awards made, I think that should only be done in the way of an instructive lecture in connection with the show.

Competitors should not have any say in the selection of judges, and no prize ought to be awarded to articles below a certain standard of excellence. When exhibits are all first-class the judging is easy, but when all are inferior it is sometimes difficult to say which one should have first honours. The foregoing is only a shadow of evils and irregularities I am cognisant of in connection with shows.—W. T.

JUDGING AT EDINBURGH SHOW.

MR. RUSHTON (page 578, last vol.) has done one of the greatest services that could be done to horticultural art by calling attention to judging in Edinburgh last November. He has had the courage to make a stand against the prevalent rules that give so much power to the judges at flower shows. It was time such a stand should be made, and this is the spot where it ought to be made.

If anything has been proved by the controversy going on in your columns more than another it is the perniciousness (I had almost said viciousness) of the principle of absolute power delegated to the judges as such, and the irrevocable finality of their decisions. After these powers are delegated the committee are entirely in the grip of the judges. They cannot even demand a scrutiny of the pointing whereby the sum of points is attained; they cannot, even in general terms, demand the "how" or the "why," the method or the ground of the judges' decision; they would "not dream of doing such a thing." For the judges might reply: "Gentlemen, we are the absolute adjudicators here; this is our decision, and as we do not admit that you have any right to put a question to us—by your own rules you have closed your lips—but here is our decision; it is final; from it there is no appeal."

In this state of matters the committee are powerless—the judges all-powerful, the former men of straw, the latter tyrants, if they will. Is the position not ridiculous? I should think it is. The question then comes, Can this state of affairs not be amended? Could not this power be duplicated? Could not the absoluteness of the judge and the finality of the decision now reposed in the judges alone be reposed in some Committee along with the Judges? These suggestions are thrown out as a possible way of escape from a very unfortunate position.

I do this all the more readily as I was at the Edinburgh Show, and from what I saw and heard am distinctly of opinion that something ought to be done to improve the present method of judging. At the stands in dispute several encounters as to the decision of the Judges took place. I was embroiled in one myself, as my opinion was asked. In fact, Mr. Editor, the matter was widely discussed in Edinburgh, and warmly too, both in railway trains and in the streets. From this a moral is to be drawn. Once a stand has received the *imprimatur* of the judge's decision, immediately a fierce and searching light beats around it. Put otherwise, the public do take cognisance of the judges' decision, and they look for awards in accordance with the principles of justice. They will not be satisfied with anything less. They have conscience. They are as a light beating (silently it may be), yet fiercely against any palpable miscarriage of justice.

When I saw the stand of blooms which was awarded the second prize I frankly own I could not help a feeling of indignation coming over me. My conscience revolted from the official decision, and quietly gave its verdict in the words, "It is injustice enthroned."

If the Committee of that Show, notwithstanding the powers relegated to the Judges, had, after their decision and the protestor's protest had been placed in their hands, said to them, "Gentlemen, we, too, along with an expert, have carefully gone over the said blooms in

question. We are of opinion your decision is wrong, although we are bound to accept it." I say if they had done that they would have earned the gratitude of every horticultural society which loves justice throughout the length and breadth of the land. By thus acting they would have placed their love of right and their sense of justice far above the ephemeral dictum of officialism. They would have risen far above it, into that altitude where no suspicion can find a home, and would have gained for the capital of the north a position for strength of will and uprightness of purpose which would have given it fame now and for years to come. But the opportunity has been lost. The Committee preferred, in their wisdom, to be official, and nothing more. They would give no opinion, they would hazard no remark that might offend the god of officialism, they could not dream of doing such a thing; they would not rise even to the level of a "desire" to appoint an expert to point the blooms when the decision of the Judges was impugned. They preferred, like the old Greek god, to sit supremely and sublimely silent on the altar of official do-nothingism or indifference. Even the Greeks grew tired of a god who was found nowhere but amidst the solitudes of Olympus, and who was quite indifferent to the wants of men. Exhibitors will grow callous respecting the god of officialism, and grow tired of committees who reign only amidst the solitudes of the committee room. The old Greek gods died for want of worshippers. Horticultural societies will not thrive, will not even exist, if exhibitors withdraw their support, and it is not to be wondered at if they should refuse longer to bow the knee at the altar of officialdom.

I may say, as one of the public who attend flower shows, I never exhibited a flower in my life, and am not likely ever to do so, but from my study some years ago of botany, and my love of flowers, I frequent the haunts where they are to be seen. The love of the beautiful is closely allied to what is righteous.—OUTSIDER.

CRITICISING THE CRITICS.

THE fact that "A. D." (page 12) has gone considerably out of his depth in attempting not only to write on subjects bearing on practical fruit culture, but to actually criticise the remarks of fruit growers made thereon, is apparent in almost every line of his article appearing under the above heading in the *Journal of Horticulture* for January 4th. "A. D." says at the beginning of his article that "some will rush into danger sometimes in criticising the writings of others," adding, "and I for one take a plunge," the result being that he has floundered pretty well at every step. And again, in his laudable desire to "elicit, so far as may be possible, facts and truths," "A. D.'s" reasoning is calculated, unintentionally of course, to pervert the actual "facts and truths" which he has taken so much trouble to criticise.

"A. D." is wrong in saying that I "having undertaken to set others right on points in fruit culture, then proceeded to criticise the questions put to me." I did nothing of the kind. I was simply asked to answer the series of questions enumerated at page 573 of last volume, and this I did in as concise a manner as possible, without in any way criticising the questions, which were put in clear and few words. My answers were penned on the spur of the moment, but I am quite willing and ready to stand by them in every particular, and I also venture to assert that my views on the subjects indicated at page 573 of last volume accord with those of practical fruit growers generally.

"A. D." is not justified in saying that my remarks on canker in fruit trees are "practically a contradiction." This may sound smart on your correspondent's part, but that is all. It must have been obvious to most readers why the description of trees referred to by me "are rarely affected with canker," although their roots penetrate into bad subsoil the same as the roots of trees of an opposite description do. It is simply owing to the fact of "strong, vigorous-growing varieties having been worked on free stocks." Many instances of this kind frequently occur in fruit culture. How is it that, say, half a dozen children may go into a river to bathe early in May, one may catch cold and die, while the remaining five sustain no harm?

Your correspondent also labours the question relating to the inactivity of tree roots very much indeed. He tells us that "whilst tree heads in the winter are in a low temperature roots remain in the ground under precisely similar conditions all the year." Nothing of the kind, we are dealing with deciduous trees and not with evergreens. Let "A. D." carry out his own suggestion by ascertaining the temperature of the ground in a fruit garden at 1 foot below the surface in January and April, and he will be able to see whether the degree of warmth in the earth in midwinter and the month of April afford any just ground for arriving at the conclusion set forth at page 12. "A. D." says, "Nature utilises the winter chiefly for giving to the soil its greater portion of moisture," adding "that if the roots remained inactive or stagnant during the winter season they would perish." Nothing of the sort. Why should living though inactive roots surrounded by normally moist and congenial soil during the interval from the fall of the leaf to the bursting of the buds in spring perish and decay—that is, succumb to the presence of their own natural conditions? I have never known fruit trees which, having arrived from the nursery when a change in the weather unfavourable to tree planting had taken place, were laid in the soil by the heels for a few weeks, exhibit any signs of root activity when taken out of the soil for final transplantation. And even if they did do so in the circumstances indicated that fact would not go to support "A. D.'s" contention, seeing that the roots had been severed from their natural hold of the soil, disturbed, as it were, in their winter slumber of inactivity, they would, therefore, evince signs of life, and

nothing more. Growers know by experience that fruit trees which are planted after the fall of the leaf in autumn make no fresh roots before the combined power of increased warmth and light cause the buds to push into growth in spring, thereby opening the valve of tree life and activity for another year—i.e., the free circulation of sap between root and branch. This valve is practically turned off again as soon as the trees have shed their leaves in the following autumn.

"A. D." also finds fault with me for looking upon light as an important factor of growth. He says, "Light cannot be by any means so important a factor of growth production as is generally assumed." And in support of this rash assertion he says, "It is easy with suitable warmth to obtain robust (?) growth and leafage on Vines in January," adding, "whereas in a state of nature they would not leaf until May." Vine growers know very well from experience what a great difference there is in the texture of growth and leaves made in January and those made a month or two later. They also know that the cause of the increased size and quality in that growth and leafage is to be attributed to the increased period of light and sunshine. "A. D." says that with the "indifferent light which Nature furnishes in the winter, growth and foliage can be had at any time." Yes, but such growth and leafage is at its best very indifferent indeed when compared with growth and leafage made in April and May. "A. D." appears to forget or not to know that light is quite as essential to the development of growth, leaves, and fruit as it is to the maturation of the same. Heat generates growth it is true, but this growth would be useless without being operated on by light, to give substance, texture and colour to it.

The last paragraph in "A. D.'s" letter goes to show that he has mixed up my statement anent the application of liquid manure to fruit borders with some imaginary one of his own creation, and so he labours the question. My words are these:—"It is most certainly beneficial to well water fruit trees with diluted liquid manure previous to their coming into bloom, then, or at any other time, always assuming that the condition of the soil about the roots is such as to render the application of water advisable." I adhere strictly to this statement in its entirety. Instead of criticising "A Fruit Grower's" replies, he introduces vagaries of his own, which clearly show that he is writing under some very disadvantageous circumstance in criticising the writings of practical fruit growers.—A FRUIT GROWER AND EXHIBITOR.

THE PRICE OF NEW PANSIES.

FOR many years the stereotyped price of 5s. a plant has been the universal custom with florists for a new variety on its first introduction. I have long regarded it as a stupid custom, preventing amateurs buying the new varieties until they became much cheaper. The days of 21s. and 31s. 6d. for new Pelargoniums passed away long since, as also did 10s. 6d. and sometimes more for a new Dahlia. I am very pleased to see that some of our florists in Scotland, to whom we are so much indebted for new Pansies and Violas, are very sensibly adopting the reduced and satisfactory charge of 2s. 6d. a plant for their quite new varieties. The popularity of the Fancy Pansy and the Viola causes a great demand for new kinds known to be of first-class quality, and at a moderate price amateurs are more inclined to add them, or some of them, as introduced, when obtainable at something considerably less than 5s. each.

Numerous new varieties are again to be introduced in the spring for the first time, and many of them I know to be "up to the mark," having seen them at the great exhibitions of Pansies at York, Tamworth, Birmingham, London, and elsewhere during the last summer. As the new flowers seen at these places are duly noticed each autumn in the *Journal of Horticulture*, raisers and owners see the desirability of letting their new seedling varieties be seen at some of these exhibitions with a view to their obtaining certificates, for at these leading exhibitions of Pansies, and meeting of experts in Pansy knowledge, very great care is exercised in awarding certificates only to flowers which possess superior qualities, and even if not very distinct from others, must show an improvement on them. This is as it ought to be, or we should be flooded with a great number of worthless varieties.—W. D.

THE APPLE SUCKER

(PSYLLA MALI, *Forster*).

THIS insect is frequently the unsuspected cause of much injury to the Apple crop. Its larvæ, which cause the mischief, are so small and so closely concealed in the buds that they may be easily passed over by casual observers. Their action upon the flower and leaf buds is often confounded with that of the caterpillars of the winter moth and the larvæ of the Apple bud weevil, which appear at about the same time.

The Psylla larvæ may be seen by careful inspection within the folds of the buds actively engaged in sucking up the juices and preventing the development of leaves and blossoms. The exhaustion of the juice and sap, and the irritation set up by the larvæ, soon cause decay and prevent the fructification of the blossom buds.

Although the Psylla mali has been known in Great Britain for a long while, it is only somewhat recently that it has been recognised as a serious trouble to Apple growers. It seems to have rapidly increased in the past four or five years. It is well known in many European countries. In Germany it has done considerable harm, and the well-known economic entomologists, Schmidberger and Taschenberg, have written able treatises upon it. It is not known in America, but an allied species known as Psylla pyricola is very destructive in Pear orchards in that

country, and has been elaborately described by Professor Slingerland of the Cornell University Agricultural Experiment Station at Ithaca, in the State of New York.

LIFE HISTORY.

Many persons have, there is no doubt, noticed quantities of little yellowish, or greenish-yellow, fly-like insects upon the leaves of Apple trees in September and October, which upon being approached give a leap before using their wings to carry them to another leaf. These, in a certain degree, resemble some of the "frog-hoppers"—species of *Cercopidae*—and, in fact, they have been mistaken for them, but upon close examination they are very different.

The winged *Psylla*, the perfect insect, is seen first about the second week in June. Its colour is green, for the most part, with slight tinges or shades of yellow. The colour, however, is rather variable, differing according to the sex and the stages of growth. At some periods there are shades of yellow, green, red, or brownish red, noticeable upon the body. These are more pronounced at pairing time. The female is more brightly coloured than the male. The wings are transparent, or slightly testaceous, and the legs and antennæ are yellow, the latter having two and sometimes four dark coloured joints at the ends. The male is about one line, the twelfth of an inch, in length; the female is slightly larger. Pairing takes place in September, and the eggs are laid in some seasons even up to November. In the autumn of the abnormal year 1893 females were seen laying eggs as late as the 3rd of November. In this case the eggs were laid upon the youngest shoots, and this appears to be the usual place where they are deposited. They may also be put upon older shoots and upon branches, but it would be difficult to discover them there on account of the deeper furrows, cracks, mossy and lichenous growths.

As a rule, the eggs are laid singly and imbedded in the fine hairs upon the epidermis of the shoots. Occasionally there are two or three together in a row. The eggs are white, or slightly yellow, pointed at each end. Taschenberg says they become red, or yellowish red, in the spring, just before the larvæ come from them.

The eggs remain until the weather becomes springlike, when tiny flat larvæ emerge from them, and at once get into the nearest buds. When the buds expand, the larvæ are found within them feeding upon their juices. The formation of fruit is prevented by their continuous suckings, and the blossoms shrivel up and fall off. The buds become filled after a while with a dirty glutinous fluid, termed "honeydew," which escapes from the larvæ, like the fluid secreted by several species of aphides, and is mixed with the excretions of the larvæ.

At first the larvæ are very small, having flat dirty yellow bodies, with brown or dark spots upon them, and but little trace of rudimentary wings or wing cases. Their eyes are red, and their feet brown.

The first change, or moult, soon occurs, but there is then no very material difference in the larva. After a few days, when the second moult is accomplished, the larva becomes light green, and its rudimentary wings are clearly defined.

After about another week, with the third moult, the rudimentary wings are more developed, as seen in the fig. 1 *a*, and the eyes and tips of the antennæ become dark.

From the first appearance of the larva up to about a month there are continuous changes in its form. At the end of this time what may be termed pupation takes place, the larva is quiescent for a few hours, the skin is cast off, and the winged *Psylla* comes forth.

When the first moult is over, the larva is seen to be covered with fine down or hairs, apparently to protect it from wet and injury when the buds have expanded.

The perfect *Psylla* passes a somewhat long and monotonous existence, as it seems, from June until pairing time in September. Taschenberg inclines to the belief that there may be another generation during the summer, and it certainly is strange that the insect should pass so many weeks in apparent inactivity. Schmidberger however, who is still the chief authority upon the subject, does not hint at a second generation.

PREVENTION AND REMEDIES.

It has been found impossible to affect the eggs of the *Psylla* upon the twigs. Like the eggs of many other insects, they are protected by hard shells. Professor Slingerland tried many washes of turpentine, kerosene, carbolic acid and potash, &c., which injured the buds, but did not have the slightest effect upon the eggs of *Psylla pyri*.

In the case of the early sorts of Apples, infested trees might be sprayed with disagreeable washes of softsoap and quassia, or softsoap and paraffin, directly the Apples were picked, to prevent the *Psyllæ* laying eggs upon the shoots. The formulæ for these washes would be:—

I.

6 lbs. of softsoap.
8 lbs. of extract of quassia chips.
100 gallons of water.

II.

6 lbs. of softsoap.
4 gallons of paraffin.
100 gallons of water.

In mixing the latter the soap should be boiled in a small quantity of water, and the paraffin put into it while hot, and then stirred together rapidly, or passed through a syringe or force pump. This may be diluted afterwards in the proper proportion.

Carbolic acid might be used instead of paraffin, at the rate of 3 gallons to 100 gallons of water.

Some small amount of prevention would ensue from pruning trees on which eggs had been laid. On young small trees this might be useful, and it would probably be advantageous to prune such trees, if infested, more closely than usual. But in the case of large orchard trees, it would be impossible to rely upon this mode of prevention.

Spraying when the buds are open and the larvæ exposed would be efficacious to some extent. The wash would run down into the bases of the open flower buds and of the expanded leaf buds, and make the quarters of the insects unpleasant, or destroy some of them. The quassia wash, as formulated above, would act as it does in the case of hop aphides, by making the food bitter and unpleasant. The paraffin and the carbolic washes would also effect this, and kill the larvæ probably with which they came in contact. Spraying should be done as early as possible in the course of the attack, before much "honeydew" has been exuded, which would hinder the action of the washes.—(*Board of Agriculture.*)

BROWALLIA JAMESONI.

ALTHOUGH introduced some years ago from Peru this handsome plant does not appear to be generally cultivated in greenhouses. When well grown it forms a beautiful object, and to be seen at its best the



FIG. 9.—BROWALLIA JAMESONI.

plant requires training to a few stakes, allowing the heads of the flowers to hang slightly downwards, as shown in the engraving (fig. 9). The corollas are about an inch across the mouth, very bright orange in colour, slightly lighter in the centre, and are borne in close heads at the extremity of the branches. Any light, rich soil suits the plant, which thrives in a greenhouse temperature with very little care.

MARGUERITE CARNATIONS.

I QUITE agree with all that has been said in favour of the Carnations, and there are other points in their favour, the first being in my opinion exemption from insect pests. My first sowing was early in Feb. 1892. The plants came into bloom the middle of June, and I had more or less flowers from them all through the following winter and spring. In 1893 I made two sowings, one the beginning of February, and another the end of March, to secure plants for winter flowering. About eighty of these in 6-inch pots were plunged out of doors until the middle of

November; then removed indoors and placed in a light airy position. They have been flowering profusely ever since, and will continue doing so to the end of May. I have had over 300 plants in pots, besides a considerable number planted out.

The plants are not particular as to soil, but seem at home in all kinds. Ours is a cold heavy clay, and we have great difficulty to get the Clove and border Carnations to thrive at all. They are very easy to propagate.—JOHN MILNE.

THOSE who have not yet grown these Carnations have missed much. I sowed some seed at the end of February last year in a mild heat, and the seedlings were potted when large enough, the bulk of them eventually finding their way into pots 5½ inches in diameter. Some few were grown in pots an inch less, but I noted those in the larger pots were much better in every way. Small pots do not afford sufficient scope for the roots, as these are freely made, and being very fibrous they absorb a quantity of moisture. A moderately rich compost is essential, the plants requiring a fair amount of stimulative food to enable them to continue longer in flower than they do when in a half-starved condition.

To test these Carnations I planted some in the kitchen garden, but I found that those in pots flowered much the best. About 90 per cent. of these Carnations come double from seed, which is a great gain, as single flowers are really of little use for decorative purposes. What I admire about them is the large numbers of self-coloured flowers that are produced. The bulk of them are deliciously scented, and all fringed at the edges of the petals.

When the weather permitted the plants were assigned a position out of doors where they could obtain all available sunlight, were given plenty of space, and well supplied with water at the roots. Directly the pots in which they were to flower were full of roots, weak liquid manure was supplied to them freely. By the early part of July they commenced to flower, and kept on unceasingly until the early part of November out of doors. Where buttonhole bouquets are in demand these Marguerite Carnations afford excellent material for the making of this favourite adornment, and as the Carnation is a popular flower for the purpose this new race is doubly valuable.—E. M.

GARDENERS' ROYAL BENEVOLENT INSTITUTION.

THE fifty-fifth annual general meeting of the members of the Gardeners' Royal Benevolent Institution was held at Simpson's, 101, Strand, W.C., yesterday (Wednesday) afternoon. H. J. Veitch, Esq., occupied the chair, and there was a good attendance of the supporters of this splendid charitable organisation. After reading the minutes of the previous general meeting the Secretary, Mr. G. J. Ingram, read the report of the Committee and financial statement for the past year, which we publish below.

ANNUAL REPORT AND FINANCIAL STATEMENT.

For the fifty-fifth time the Committee of the Gardeners' Royal Benevolent Institution have the great satisfaction of presenting to their supporters a report, which shows that the Institution is still in a prosperous condition, and continues to carry on with success the good work for which it was founded—a work which has proved of incalculable benefit to those whom it is its especial office to aid, and by whom it is highly valued and appreciated.

It is a great pleasure for the Committee to be able to state that the anniversary festival held in June last was entirely successful, and they desire to record their heartiest thanks to Baron Schröler, who so kindly and ably presided on that occasion, and whose liberality and advocacy of the claims of the Institution contributed in a very great degree towards making the festival a financial success. The Committee would also gratefully acknowledge their indebtedness to all those who, either by acting as Stewards, or by sending gifts of flowers and fruit, assisted them in their efforts to bring about such a satisfactory result.

During the past year thirteen pensioners have died, three leaving widows, whose claims to be placed on the pension list in succession to their late husbands have been carefully considered, and having been found satisfactory they have all been placed on the fund in accordance with rule iii., 13.

The Committee have much satisfaction in stating that they have decided to increase the number of pensioners now on the books by fifteen, to be elected this day. Three of these, in accordance with rule iii., 5, are recommended for a pension without the trouble and expense of an election, thus leaving twelve to be elected in the usual manner. The Committee regret that they are unable to place a larger number of candidates on the funds; but they would point out that the proposed addition necessitates an increased expenditure, and they therefore earnestly appeal to the supporters of the Institution to aid them by their liberality in meeting the additional liabilities thereby incurred.

It is very gratifying for the Committee to be able to announce that an auxiliary has been formed at Bristol, for Bristol, Bath and neighbourhood, with the view of making the objects and claims of the Institution better known in that district. Their thanks are specially due to Mr. J. H. Vallance (Hon. Sec.) and to those gentlemen through whose efforts this new departure has been made. It bids fair to create a greater interest in the work, and the Committee trust that this example will be followed by other friends of the Institution in different parts of the country.

In conclusion, it is with feelings of deep regret that the Committee have to refer to the loss by death of many valued supporters during the past year, amongst whom were the Earl of Derby and Lord Ebury, both

Vice-Presidents and warm friends of the Institution. These losses, combined with the great need of extending the work, compel the Committee to urge all those who have the well being of the Institution at heart to use their utmost endeavours to promote its interests.

THE GARDENERS' ROYAL BENEVOLENT INSTITUTION.

BALANCE SHEET FOR 1893.

DR.	£	s.	d.	£	s.	d.	£	s.	d.
To Balance							935	11	7
" Annual subscription				1237	9	0			
" Donations at and in consequence of annual festival dinner	1437	2	6						
" Collecting cards	178	2	4						
" Return of income tax	4	18	2						
				1650	3	0			
" Advertisements in annual list of subscribers				47	6	6			
" Dividends on investments and interest on deposits				796	14	6			
							3781	11	0

Invested funds of the Institution—

£25,000 Two and three quarters per Cent. Consolidated Stock.
£2 654 19s. 10d. Three per Cent. India Stock.
"Silver Wedding Thanksgiving Fund
£479 10s. 4d. Midland Railway Three per Cent Debenture Stock.
£1300 on deposit with bankers.

£4717 4 7

CR.	£	s.	d.	£	s.	d.	£	s.	d.
By Pensions and gratuities							2687	11	8
" Secretary's salary				200	0	0			
" Rent of offices				65	12	6			
" Office assistance				23	0	0			
" Cost of presentation to Hon. Solicitor				20	10	9			
" Printing (including annual report and list of subscribers)				137	0	0			
" Stationery				21	1	4			
" Expenses of annual meeting and election of pensioners				15	17	6			
" Expenses of annual festival dinner	176	16	6						
" Less tickets sold	89	5	0						
				87	11	6			
" Cost of appeals				29	2	7			
" Collecting boxes				6	7	6			
" Postage, travelling, and incidental expenses				83	12	11			
							692	16	7
" Placed on deposit with bankers							400	0	0
" Balances, viz.:—									
With Treasurer at bankers				934	13	1			
" Secretary				2	3	3			
							936	16	4

£4717 4 7

Audited and found correct, January 14th, 1894. (Signed) { THOMAS SWIFT.
JESSE WILLARD

A resolution to the effect that the Committee's report and financial statement be adopted, was unanimously carried. On the motion of Philip Crowley, Esq., Messrs. J. Douglas, W. Denning, J. Laing, N. Sherwood, and G. Wythes retire, according to the bye-laws, from the Committee, but be re-elected; also that Messrs. J. H. Veitch and G. Bunyard be elected in the place of Messrs. A. Veitch and H. Tillman. This resolution was carried. Mr. H. J. Veitch was re-elected Treasurer, and Mr. G. J. Ingram as Secretary. Messrs. Manning, Swift and Willard were re-elected auditors for the ensuing year, and Messrs. J. Buck, W. Craue, Higgins, Alexander, and Gold were appointed arbitrators. It was then proposed that J. Jobson, J. Webb, and Lydia Bulman be, in accordance with the rules, placed on the funds of the Institution without election. This resolution, on being put to the meeting, was carried. Messrs. H. Cutbush, G. Monroe, J. Webber, A. Outram, and B. Wynne were appointed scrutineers, and later in the afternoon declared the poll, those with an asterisk prefixed being elected pensioners of the Institution.

*Jane Nichols, 2346; Clara E. Brown, 1635; John Collier, 519; Henry Fielder, 1785; *Emma Kendall, 2620; Thomas Thomas, 2133; *Francis Woodhams, 2209; Thomas Bundy, 437; James Clarren, 2100; *John Comber, 2992; David Cornell, 184; Hester Falconer, 790; *Thomas Gooch, 3051; *Ann Harding, 2321; *Richard King, 2300; Ambrose Minty, 253; John Percy, 1336; Robert Pettitt, 1407; Eliza Webb, 663; *William Pamplin, 2655; Thomas Bannister, 873; Robert Begbie, 413; *Sarah Buckham, 2615; *James Burt, 3227; Thomas Cawley, 1195; William Croshier, 947; Alexander Duncan, 37; Charles Harris, 796; Samuel Hicks, 71; Emma A. Ivery, 1244; *John Mackay, 2498; Joseph Monk, 173; Thomas Parry, 27; Joseph Shearn, 575; Charles Smith, 956; *Margaret Tindall, 2934.

The members and friends of the Institution held their annual friendly supper last night (Wednesday) at the same place after the general meeting closed. N. Sherwood, Esq., occupied the chair, and he was supported by many prominent horticulturists. The arrangements were admirably carried out by Mr. G. J. Ingram, the energetic Secretary, and a pleasant evening was spent. A detailed report of the principal speeches that were delivered will appear in our next issue.

THE EDIBLE LICHEN OF JAPAN.—This, known as "iwatake," is described in the "Botanisches Centralblatt" (1893, No. 45) by Dr. M. Miyoshi, under the name *Gyrophora esculenta*, sp.n. Its commercial value is due to the large amount which it contains of starch and of some gelatinous substance; and it is also extensively used in Japanese cookery as a condiment, having a pleasant flavour and being free from purgative properties. In some parts of Japan, especially the mountainous districts, "Nature" says, it completely covers the moist granite rocks. After drying it is sent into the towns, and a large amount is annually exported.



FRUIT FORCING.

Peaches and Nectarines.—*Earliest Forced Trees.*—Continue to fertilise the blossoms, using a camel's-hair brush, feather, or rabbit's tail mounted on a small stick; these are better and more effectual than shaking the trellis. When the fruit is well set syringe the trees occasionally in the morning or early part of fine afternoons to assist casting off the remains of the flowers. In bright weather syringing may be practised in the morning and afternoon, but when dull have recourse to it in the morning, this and damping the house in the afternoon being sufficient. The water employed must be of the same temperature as that of the house, and the inside border should be duly supplied with it. Disbudding will soon require to be attended to, but it must be done with discretion at this early season, it being better to remove a few shoots daily from a tree than many at a time at distant intervals. The night temperature may now be maintained at 55° to 60° on mild nights, 60° to 65° by day, 5° less as the minimum when the weather is severe and dull, admitting a little air at 65°, not allowing an advance over 70° without full ventilation, always excepting a little left at the top of the house constantly.

Second Early Forced Trees.—When the blossoms show colour on the trees started with the new year syringing must cease, but every available surface should be damped in the morning and afternoon. Supply water as necessary to keep the border in a thoroughly moist state. Keep a sharp look out for aphides. If there be any fumigate the house on two or three consecutive evenings moderately, which will be sufficient to keep the pests under until the fruit is set. In case of an excess of blossom buds, and they are abundant this season, also promising, draw the hand contrary way of the growth along the under side or back of the trellis, so as to reduce the number of bloom buds, which will increase the vigour of those left and best situated, therewith tending to a more even and better swelling of the fruit after setting.

Succession Houses.—Push forward the pruning of the trees, cleansing of the house, dressing the trees with an insecticide, and readjusting them to the trellis, leaving plenty of room in the ligature for the swelling of the branches. The surface of the border may be pointed over with a fork, but not disturbing the roots, the loose soil removed, and fresh loam supplied, sprinkling on it 4 ozs. per square yard of Thomas' phosphate powder (basic slag). This is particularly valuable on account of the lime it contains, as well as phosphorus, for Peaches and all stone fruits, especially where the soil is of a rich close nature, full of vegetable matter or humus. In other cases steamed bonemeal and kainit in equal proportions may be applied at the rate of 3 ozs. per square yard with advantage. If the borders are at all dry they should be given a thorough watering. Houses, however, that have moveable roof lights, and these being off, will not require any water, the soil being thoroughly moist from rain and snow. The shoots are kept in a condition by the air moisture unfavourable to evaporation, so that the trees not only have thorough rest, but the buds are prevented falling.

Pines.—*Fruiting Plants and Starters.*—Those should now have a mean temperature of about 70°, varying it 5° according to external conditions, admitting air at 80° with sunshine, but not lowering the temperature, allowing the heat to rise to 85°, closing the house at 80°. Syringe all surfaces twice a day, but do not sprinkle the bed between the plants; also avoid dense steam produced by syringing highly heated hot-water pipes. The plants should be syringed occasionally early in the afternoon when the axils of the leaves become dry. Examine the plants about once a week, and supply guano water to such as need moisture at the roots.

Starting Plants for Successional Fruiting.—About the commencement of February more plants of Queens should be started to supplement the supply of fruit from those which are already introduced for affording it early in summer. Beds having hot-water pipes beneath them can soon be prepared for the reception of the plants, but it is not the case where fermenting materials alone are used, hence the subject is mentioned in advance, so that the needful preparation may be made at once, and 85° to 90° of bottom heat secured by the time required. When plants which have been kept somewhat drier are started see that the balls of soil are made properly moist, so that with the extra warmth root action may commence at once.

Successional Plants.—A night temperature of 60° to 65°, and 5° less in severe weather, will be suitable for those, and 5° to 10° higher in the daytime, according to external conditions. Keep the plants rather dry at the roots, but not excessively so, and when water is considered necessary give it thoroughly, at a temperature of about 80°. Suckers should have a temperature of 55° to 60°, 60° to 65° by day from fire heat, and 10° more from sun heat.

Cherry House.—Give due attention to watering trees in pots and syringing on fine days, damping occasionally only when the weather is dull. Maintain the night temperature at 40°, 45° to 50° in the daytime by artificial means, ventilating at 50°, and allowing a rise of 10° to 15°

from sun heat, with full ventilation, closing at 50°. Scrutinise the trees closely for aphides, and if there be trace of any take measures at once to eradicate them.

Cucumbers.—Maintain the night temperature at 65°, allowing 5° more in mild weather, whilst it may be 5° less on cold nights, 70° to 75° by day, and 80° to 85° with sun heat. When the external air is mild a little ventilation may be given at 80°, closing before the temperature is reduced below that degree, so as to raise it to 90° or 95°; but if the external air is cold, although the sun shines, it is better to allow the temperature to advance a little beyond the above limits than to admit cold air, which injures the foliage, also causing the fruit to become stunted and to curl at the end. Plants in bearing will require to be examined about twice a week, removing all weakly, superfluous, and exhausted growths, reserving as much of the young bearing wood as is necessary to fill the allotted space, stopping the shoots above or two joints beyond the show for fruit.

Young plants coming into bearing should not be allowed to bear too soon, and by no means be overcropped. They are greatly assisted by removing the staminate blossoms, also superfluous pistillate flowers as they appear. Tendrils should also be pinched off. The supply of moisture both at the roots and in the atmosphere must be regulated by circumstances and external conditions. Syringing should not be practised on the foliage, except a light sprinkling in the early part of bright afternoons, damping the floor moderately at about 8 A.M. and 2 P.M. Encourage the roots to spread on the surface of the bed by adding lumpy loam from time to time, with which may be incorporated a little well decomposed cow manure or fresh sweetened horse droppings. When roots are had in this manner the plants may be fed to any extent by sprinkling bone superphosphate and powdered saltpetre in equal parts on the surface, at the rate of 2 ozs. to 3 ozs. per square yard every fortnight, with a light dusting of soot between times.

Keep a keen eye on the plants for aphides, and fumigate several times moderately and consecutively rather than once severely. The evening is the best time for fumigating, following it up by another dose the following morning. If mildew appear dust with flowers of sulphur and paint the hot-water pipes with a cream formed of it and skim milk. The fumes given off will kill white fly and mildew, also red spider. Canker is also unusually prevalent; freshly slaked lime rubbed into the affected parts will arrest its progress.

THE KITCHEN GARDEN.

Early Cauliflowers.—Plants in frames should be only protected in very severe weather, abundance of air being admitted at all other times. Unless this is done they will soon commence growing, and will transplant badly accordingly. They naturally move better out of pots—always providing they are not root-bound—and during mild weather a portion of the stock might well be placed singly in 4-inch pots and returned to near the glass in pits, frames, or shelves in cool houses. By the time they are well established in the pots it will most probably be possible to plant out finally. If the stock of plants is insufficient to meet the requirements of the place sow more seed of Early Forcing, Dwarf Erfurt, or Early London, and such good late summer and autumn varieties as Eclipse and Autumn Giant. Sow the seed thinly in pans or boxes, and set in gentle heat rather than in a forcing temperature. The aim should be to have sturdy plants which will not damp off wholesale. If raised in rather strong heat, transfer to shelves in a cooler house to harden prior to potting or pricking out.

Forcing Cauliflowers.—When the Broccoli escapes destruction from frosts there is less need to attempt forcing Cauliflowers. There is, however, no certainty about the former, and in any case the neat, delicately flavoured Cauliflowers are preferred in most establishments. Anything in the shape of hard forcing must not be resorted to. All that is needed is a deep rough frame, a few old glazed lights, and a mild hotbed of leaves and manure. The plants could certainly be forwarded rather more rapidly in a brick pit with a single hot-water pipe round it, and, failing either pits or glazed lights for the frames, rough frames, poles, and mats may be substituted. Cover the heating material with a layer of short manure, and on this place about a foot of rich loamy compost. The Early Dwarf Forcing or Snowball is the best variety for frame culture, and if sturdy plants out of small pots are firmly planted, not less than 15 inches asunder each way, they will soon commence active growth. Ventilate freely when the weather permits, keep the soil uniformly moist, apply liquid manure freely directly the plants commence hearting in, and this should lead to the production of very acceptable hearts from the middle of April onwards.

Peas in Pots.—Peas are not amenable to hard forcing, but may be forwarded considerably under glass. Comparatively tall growing varieties can be successfully grown under glass in pots or otherwise, but all things considered, the Dwarf Early, English Wonder, Chelsea Gem, and William Hurst are the best for pot culture. Old Chrysanthemum soil suits Peas well. Well drain the pots and three parts fill with soil, making this firm. Sow the seed somewhat thinly, and cover with 1 inch of soil. Fifty pots is none too many for a batch, about three dishes being had from these, and a succession should be provided by making another sowing a fortnight later. The pots may be arranged on the beds or floors of vineries or Peach houses, being gently forced till the plants are up, when the high back shelves, front stages, and front beds in the same houses will be the best places till such times as the night temperature exceeds 55°, when other light but cooler quarters should be assigned the Peas. Not till the pots are well filled with roots

will much water be needed, after which the plants will take it freely and also liquid manure.

Frame Culture of Peas.—Where rough moderately deep frames are at present utilised for storing Strawberries in pots, these, as well as other frames or pits, might well be turned to good account for the production of a few dishes of Peas to succeed those gathered from plants in pots. In anticipation of this prepare the requisite number of plants in pots or boxes for turning out directly the beds are ready for them. The varieties already named are the best also for frame culture. About a pint of seed should give enough plants for filling a fairly large three-light frame. The seed may be either sown in shallow boxes, the plants being eventually shaken out of the soil and planted Box-edging fashion, or they may be sown in 4-inch pots and planted out from these. These, if placed in heat and kept moist, will germinate rapidly, and care should be taken to harden off and put out before the plants become root-bound, or otherwise premature flowering will result. It is yet too early to raise plants for turning out into the open ground.

Early Lettuces.—Lettuces grown quickly in frames are far superior in appearance and quality to any cut early in the open. Whether, therefore, there is a good supply of autumn raised plants or not, no mistake will be made in resorting to frame culture and gentle forcing. For the latter purpose the best varieties are Golden Queen, Early Paris Market, and Commodore Nutt—all Cabbage varieties of neat growth. Autumn raised plants would be suitable if not far advanced in growth, but would not be far ahead of any raised by sowing seed at once. Sow thinly in pans, place on a gentle hotbed, and, before the plants become drawn, transfer to shelves in cool house. A portion of the plants thus prepared could be gently forced, and the rest be pricked out 6 inches asunder on a warm border, where, with little or no protection, they will yet heart in early. Those in frames should have the benefit of a mild hotbed surfaced over with 6 inches of good loamy soil. If the plants are pricked out in this 5 inches asunder each way, every other one can eventually be cut out for use before they are fully grown, the rest having then a good chance to develop to their full size. Hard forcing would lead to a spindly growth of leaves only. Admit air freely whenever the weather is favourable, and protect with mats or litter during cold nights. Lettuces may also be had early from boxes of good soil, these being placed in a light position and gentle heat. Those who grow Peas in frames should plant these early Lettuces midway between the rows of Peas, the salading thus obtained alone more than paying for all the trouble taken.

A Frame of Parsley.—The severe frosts experienced early in this month did not greatly injure unprotected Parsley, but it may not escape so satisfactorily if other severe frosts take place. In any case it will be several weeks before serviceable fresh growth will be made; and, before it is too late, some of the roots might be lifted and bedded rather thickly in rich soil in frames over a mild hotbed, or they could be placed in deep pots and set in Peach house or vinery being forced. If this is done before the hearts are injured it may be the means of preventing a very undesirable break in the supply of Parsley in the spring. An early supply of Parsley can also be had by sowing the seed at once in a frame or hotbed prepared as for Carrots. Sow thinly in drills 4 inches asunder, and keep dark, close, and warm till the seedlings appear, after which give a little air and admit plenty of light. Roughly thin out where at all thick, and when the plants have made a few leaves, thin out very freely, the thinnings being dibbled out on a warm or sheltered border, where they will be ready to gather from long before any Parsley can be had by sowing in the open. Those left in the frame should have a gentle watering after the thinning out; and if kept in a moist condition at the roots, will produce a good supply of fine leaves.

THE BEE-KEEPER.

APIARIAN NOTES.

BEES AND THE WEATHER.

WITH the exception of a few days early in the month, bees have been daily on the wing, which is very favourable for consumption of stores, as well as loss of bees. Breeding, no doubt, has been going on in most hives for some weeks past, but not in so satisfactory a manner as to insure strong hives at the proper time. In the neighbourhood where I reside many chilled bees are to be seen, and this may be to such an extent as to depopulate the hives till the internal economy may cease. The same news comes from other localities, and some persons consider them to be the old bees—an easy way of getting over a difficult question to those who are not acquainted with facts.

Doubtless most hives went into winter quarters extra strong in numbers, so that the evident loss may not materially affect them. The ulterior evil lies in the probable deposing of queens in the early summer. Let us hope for the best. The bees are now searching every nook for flowers that are likely to yield the smallest grain of pollen. Snowdrops, Wallflowers, Aconites, Jasminum nudiflorum, Ivy, and Hellebores are in bloom, and in a few days other early flowers will commence to expand. A bee-keeper was on a visit to me from the 5th to the 8th of the month,

and while showing him the various parts of the hive, when examining the mouthpiece of one that in September was a nucleus covering two shallow combs, he was surprised to find it crowded with bees to the entrance, so much has it bred during the winter. The case is perhaps excessive, but not abnormal. I do not believe there is such a thing in Nature as an entire cessation of activity in plant or animal.

The fine, but changeable spring-like weather we have been enjoying since the 6th inst. is every way favourable for feeding hives that may be suspected short of stores. Bees feed more readily during January than in the two subsequent months when there is more brood in the hive than at present. My advice, then, is to embrace the opportunity and feed all those liberally that are likely to be short of stores before April; but let well provisioned ones alone. Many hives well stored in September are now very light.

In saying that the weather during the winter has greater influence on the future prosperity of bees than some persons imagine is keeping within the bounds of facts and reason. Unless we preserve our bees during the winter in proper strength the profitable returns the autumn following will be almost, if not entirely, nil. We prepare our hives in the autumn with the view of them withstanding the rigours of an arctic winter. In such cases the bees content themselves to live within doors, and when spring comes, out they rush, with their joyous hum, with an eagerness to enjoy the airing, and to visit every opening flower. At this first airing, the day calm and sunny, scarcely a bee will be lost, while the hive is stronger than it was in October. Such is a glimpse of the sort of winters that delight the bee-keeper.

On the other hand, when the winters are changeable, often with high temperatures, such as the present one has been, it is beyond the power of man to preserve his bees as he would wish. I have sometimes spread dry sawdust or rough husks from Oats thickly in front of my hives, which while they were dry bees alighting on them rose again, but there is of course no material that remains perfectly dry during all weathers. Dried bracken is sometimes useful, but even this we cannot strew so thickly as to prevent bees alighting on the ground.—A LANARKSHIRE BEE-KEEPER.



*All correspondence should be directed either to "THE EDITOR" or to "THE PUBLISHER." Letters addressed to Dr. Hogg or members of the staff often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post, and we do not undertake to return rejected communications.

Book on Geometry (F. R. E.).—"The School of Art Geometry" will answer your purpose. The price of this book is 1s., and it can doubtless be obtained through any bookseller. Messrs. Geo. Gill & Sons, 23, Warwick Lane, Paternoster Row, London, are the publishers.

Variation in Calanthes.—Some varieties of Calanthe Veitchi are darker than others, and there is a difference also in the shape of the pseudo-bulbs. Your "spikes 3 feet 6 inches long, bearing three dozen flowers," were creditable examples of culture. Your letter was incorrectly and insufficiently addressed.

Foreign Honours (P.).—It is unusual for emissaries to tout at flower shows for members of scientific institutions at home or abroad; and it is at least prudent on the part of exhibitors to investigate before subscribing to anything which they know nothing about. We think it reasonable to expect that evidence should be forthcoming that the foreign society, or whatever it is, which offers diplomas, should be recognised as a scientific institution of standing by the government of the country in which it is established. Can such evidence be produced?

Pear Tree Scale—Beurré (F. M. M.).—The growths of the Pear tree are infested with mussel scale, which may be destroyed by painting with petroleum emulsion and other advertised insecticides, or a wash formed of half a pound each of caustic soda and pearlash to six gallons of water, applying with a brush at a temperature of 120° to 130°, wetting every part. This wash must only be used whilst the tree is dormant, and care taken not to dislocate the buds. The whole tree must be treated with the solution, without allowing it to run down the

branches. *Beurré*, with the final "é" accented, is correct as applied to the Pear, as the word is used as an adjective; but when used as a noun, and applied to *beurre* (butter), the final "e" is not accented. *Beurré* indicates the buttery consistency of the Pear. We suspect you are not far wrong in your pronunciation of the word. Your French authorities have made a mistake. All learned French pomologists spell the word "*Beurré*," and pronounce somewhat as "*Buorae*."

Inserting Mistletoe Berries on Apple Trees (F. R. E.).—The berries should be inserted in a notch cut in the bark on the under side of a branch. Avoid crushing the seed, and have the embryo directed towards the branch. To prevent birds disturbing the seeds after being placed in position cover with tiffany or other light material. The seeds may also be fastened to a smooth part of the tree by the sticky substance surrounding them, but protect from birds. Insert the seeds at once. Some persons find rubbing them on the smooth bark quite sufficient. Try both methods with many seeds, and some may be expected to germinate.

Closed Flow Box of Heating Apparatus (F. J.).—The cover (at *a* in your sketch) should fit close—the closer the better, as there will be less danger of steam arising from it when the apparatus is worked, the steam being more or less injurious in the winter season, and moisture is at all times better had by damping available surfaces other than those highly heated. If the cover of the flow box fits quite air-tight it is difficult to ascertain how the pipes can be filled with water, as there must be some means of letting out the air. This we assume is effected by means of the lid, for though it may appear to fit tight it will hardly do so to the exclusion of air unless caulked.

Trachelium cæruleum (H. B.).—Although *Trachelium cæruleum* has been cultivated in this country for more than two centuries, it is far from being generally known. Like you we have frequently met with persons whose knowledge of the plants of the day extended to countless varieties of each species, but who acknowledge their ignorance of this handsome plant. It is a native of the south of Europe, and though moderately hardy it suffers from unusually severe winters, therefore it is desirable in most cases to preserve a plant or two under glass; but it is easily raised from seed, and seedlings flower the same season. Allied to the *Campanula* it, nevertheless, differs from many of that genus in its habit of growth; it does not throw up suckers like most of that family, but produces side shoots, which make excellent slips or cuttings. These, if put into a cold pit or under a handglass, where some protection can be afforded them in winter, make good plants in the following spring.

Rooting Chrysanthemum Cuttings (Reader).—The cuttings should be about 3 inches long, and cut square across below a joint. The best of all means of rooting them is under handlights, or in a propagating frame, placed in a house where a temperature of from 40° to 50° is maintained. These should be on the side stages, and as near the glass of the roof as possible to prevent the cuttings becoming drawn. Some growers root their cuttings in a cold frame, but they are more liable to suffer from damp; others in pots on shelves in an ordinary greenhouse, but in such positions they often flag very much. The cuttings may be inserted five or six round the edge of a 5-inch pot. Equal parts of light loam and leaf soil, with a free admixture of coarse silver sand, the whole passed through a half-inch sieve and thoroughly mixed, is the best compost. Sprinkle a little silver sand on the surface of the soil, to be carried down by the dibber for the cuttings to rest on, the rooting being quicker among sand. The soil should be pressed firmly round each cutting, particularly its base, and a gentle watering given through a fine-rosed watering-can. Stand the pots on fine-sifted ashes for securing a cool, moist foundation, and excluding air. The lights must be kept closed until roots are formed, with the exception that they may be taken off for an hour in the morning to allow for the dissipation of moisture, and in the evening the glass should be wiped dry. Shading will not be required. In about a month the cuttings will have rooted, when admit a little air by tilting the light slightly at first, and increasing until they can be safely removed. But little water will be required during the process of rooting, yet the soil must be kept sufficiently moist for the support of the cuttings or plants. With care you may safely root soft cuttings.

Names of Fruits.—Notice.—We have pleasure in naming good typical fruits (when the names are discoverable) for the convenience of regular subscribers, who are the growers of such fruit, and not collectors of specimens from non-subscribers. This latter procedure is wholly irregular, and we trust that none of our readers will allow themselves to be made the mediums in infringing our rules. Special attention is directed to the following decision, the object of which is to discourage the growth of inferior and promote the culture of superior varieties. *In consequence of the large number of worthless Apples and Pears sent to this office to be named, it has been decided to name only specimens and varieties of approved merit, and to reject the inferior, which are not worth sending or growing.* The names and addresses of senders of fruit to be named must in all cases be enclosed with the specimens, whether letters referring to the fruit are sent by post or not. The names are not necessarily required for publication, initials sufficing for that. Only six specimens can be named at once, and any beyond that number cannot be preserved. *They should be sent on the first indication of change towards ripening. Dessert Pears cannot be named in a hard green state.* (G. B. W.).—We are unable to name the Pear. The fruits sent appear to have been gathered too soon, and the characteristic quality of the variety has not been developed. (H. J. C.).—*Gloria Mundi*.

Names of Plants.—We only undertake to name species of plants, not varieties that have originated from seed and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in firm boxes. Slightly damp moss, soft green grass or leaves form the best packing, dry wool the worst. Not more than six specimens can be named at once, and the numbers should be visible without untying the ligatures, it being often difficult to separate them when the paper is damp. (H. M.).—*Maranta Veitchi*. (Berks).—Apparently *Othonna crassifolia*, but must have flowers to identify with certainty. (Amateur).—1, *Peperomia argyrea variegata*; 2, *Phormium tenax*. (Somerset).—*Spiraea alnifolia*. (F. P.).—1, *Begonia manicata*; 2, *B. Ingrami*.

TRADE CATALOGUES RECEIVED.

W. Clibran & Son, Oldfield Nursery, Altrincham.—*Vegetable and Flower Seeds*.

W. Drummond & Sons, Dublin.—*Garden Seeds*.

Henry Eckford, Wem, Shropshire.—*Sweet Peas, Vegetable, and Flower Seeds*.

Fotheringham & King, Corn Exchange, Dumfries.—*Flower and Vegetable Seeds*.

Harrison & Sons, Leicester.—*Vegetable and Flower Seeds*.

W. Baylor Hartland, Cork, Ireland.—*Year Book of Seeds*.

Laxton Brothers, Bedford.—*Vegetable and Flower Seeds*.

Little & Ballantyne, Carlisle.—*Garden Seeds and Horticultural Implements*.

W. Percy, Beadwell Road, Forest Hill.—*Early and Summer Flowering Chrysanthemums*.

Ant. Roozen & Son, Overveen, Haarlem, Holland.—*Gladioli, Dahlias, and Vegetable and Flower Seeds*.

C. Turner, Royal Nurseries, Slough.—*Kitchen and Flower Garden and Farm Seeds*.

Wallace & Co., St. John Street, Colchester.—*Bulbs for Spring Planting*.

COVENT GARDEN MARKET.—JANUARY 17TH.

FRUIT.

THE past frost has not improved our Market, business being exceptionally dull.

			s.	d.	s.	d.				d.	s.	d.			
Apples, per bushel	2	6	to	9	0	Peaches, per doz.	..	..	0	0	to	0	0
Cobs	40	0	42	6	Plums, per half sieve	..	..	0	0		0	0
Grapes per lb.	0	6	2	0	St. Michael Pines, each	..	..	2	0		6	0
Lemons, case	10	0	15	0								

VEGETABLES.

	s.	d.	s.	d.		s.	d.	s.	d.	
Beans, Kidney, per lb.	1	0	to	1	6	Mustard and Cress, punnet	0	2	to 0	0
Beet, Red, dozen	1	0	0	0	0	Onions, bushel	3	6	4	0
Carrots, bunch	0	4	0	0	6	Parsley, dozen bunches	2	0	3	0
Cauliflowers, dozen	2	0	3	0		Parsnips, dozen	1	0	0	6
Celery, bundle	1	0	1	3		Potatoes, per cwt.	2	0	4	6
Coleworts, dozen bunches	2	0	4	0		Salsafy, bundle	1	0	1	5
Cucumbers, dozen	2	0	4	0		Scorzoneria, bundle	1	6	0	0
Endive, dozen	1	3	1	6		Seakale, per basket	1	6	1	9
Herbs, bunch	0	3	0	0		Shallots, per lb.	0	3	0	0
Leeks, bunch	0	2	0	0		Spinach, bushel	8	0	0	0
Lettuce, dozen	0	9	1	0		Tomatoes, per lb.	0	3	0	7
Mushrooms, punnet	0	9	1	0		Turuips, bunch	0	4	0	6

AVERAGE WHOLESALE PRICES.—OUT FLOWERS.

Orchid Blooms in variety.

	s.	d.	s.	d.		s.	d.	s.	d.	
Arum Lilies, 12 blooms ..	4	0	to	6	0	Orchids, per dozen blooms	3	0	to 12	0
Azalea, dozen sprays.. ..	0	9		1	0	Pelargoniums, 12 bunches	6	0		12 0
Bouvardias, bunch	0	6		1	0	Pelargoniums, scarlet, doz.				
Camellias, dozen blooms ..	0	9		2	0	bunches	4	0		9 0
Carnations, 12 blooms ..	2	0		4	0	Poinsettia, doz. blooms ..	4	0		8 0
Chrysanthemums, dozen						Primula (double), dozen				
bunches	2	0		6	0	sprays	0	6		1 0
Chrysanthemums, dozen						Pyrethrum, dozen bunches	2	0		4 0
blooms	1	0		4	0	Roses (indoor), dozen ..	1	0		2 0
Eucharis, dozen	4	0		6	0	„ Tea, white, dozen ..	1	0		3 0
Gardenias, per dozen ..	4	0		6	0	„ Yellow, dozen	2	0		4 0
Hyacinths, dozen spikes ..	3	0		5	0	Roses, Safrano (French),				
Hyacinth, Roman, dozen						per dozen	1	6		3 0
sprays	0	6		0	9	Roses, Safrano (French),				
Lilac (French) per bunch	3	6		6	0	per 100	6	0		10 0
Lilies of the Valley, dozen						Roses, Safrano (English),				
sprays	0	9		2	0	per dozen	2	0		3 0
Lilium longiflorum, per						Roses, Maréchal Neil, per				
dozen.. ..	6	0		12	0	dozen	3	0		6 0
Maidenhair Fern, dozen						Tuberose, 12 blooms.. ..	0	4		0 6
bunches	4	0		6	0	Tulips, dozen blooms ..	0	9		2 0
Marguerites, 12 bunches ..	2	0		4	0	Violets, Parme (French),				
Mignonette, 12 bunches ..	3	0		6	0	per bunch.. ..	3	0		5 0
Narciss, Yellow (French),						Violets, Ozar (French), per				
dozen bunches.. ..	2	0		4	0	bunch	2	6		3 0
Narciss, White (French),						Violets (English), dozen				
dozen bunches.. ..	2	0		4	0	bunches	1	6		2 0

PLANTS IN POTS.

	s.	d.	s.	d.		s.	d.	s.	d.		
Arbor Vitæ (golden) dozen	6	0	to	12	0	Foliage plants, var., each..	2	0	to	10	0
Aspidistra, per dozen ..	18	0		36	0	Hyacinths, per dozen ..	6	0		9	0
Aspidistra, specimen plant	5	0		10	6	Hyacinth, Roman, dozen					
Azaleas, per dozen	24	0		42	0	pots	9	0		12	0
Chrysanthemums, per doz.	4	0		9	0	Lilium Harrissi, per dozen	12	0		24	0
Dracæna terminalis, per						Lycopodiums, per dozen ..	3	0		4	0
dozen	18	0		42	0	Marguerite Daisy, dozen ..	6	0		12	0
Dracæna viridis, dozen ..	9	0		24	0	Mignonette, per doz....	6	0		9	0
Ericas, per dozen	9	0		24	0	Myrtles, dozen	6	0		9	0
Euonymus, var., dozen ..	6	0		18	0	Palms, in var., each	1	0		15	0
Evergreens, in var., dozen	6	0		24	0	„ (specimens)	21	0		£3	0
Ferns, in variety, dozen ..	4	0		18	0	Poinsettia, per dozen	12	0		15	0
Ferns (small), per hundred	4	0		6	0	Solanums, per dozen	9	0		12	0
Ficus elastica, each	1	0		7	6	Tulips, per dozen	6	0		9	0



POULTRY FATTENING.

WHILE poultry farming on a large scale has so often failed, and the annual importation of both poultry and eggs is ever increasing, and farmers are asked why they do not set themselves to try and turn the golden stream flowing so steadily to the foreign producer into their own pockets, it is indeed refreshing to hear of the rapid growth of the Sussex poultry trade, and to know that it is carried on in a manner so simple and so efficient, as to be upon a really sound basis, and capable of almost indefinite extension. It may be termed a rough and ready form of co-operation, shared profitably by the cottager who rears the chickens, the higg'ler who collects and fattens them, and the salesman through whose hands they pass to consumer or shopkeeper. Some higg'lers only collect from the breeders for the fatteners; very many of the breeders have only a rude hovel for the fowls to roost, lay, and hatch the eggs in, yet they contrive to rear early spring chickens, for the best of which—strong birds nine or ten weeks old—higg'lers pay as much as 3s. 6d and 4s. apiece. If the cottagers were able to provide thorough shelter, with warm food, and to hold in reserve a sufficient stock of pullets for early laying, they would be able to rear many more of the earliest and most profitable spring chicken. As it is, they purchase all the food, and realise a profit of £10 to £15 a year. This is what we have known our own workmen to do—the man feeding the early broods by lamp-light before he goes to work in the morning and after he returns in the evening, the wife attending to their wants by day. The small farmer, or rather his wife, can, and does proceed upon a much larger scale, rearing coops, each with its brood, being placed about the farm in every available spot. Sometimes so numerous are they that the labour of feeding, watering, and removal of coops is almost incessant from 5 A.M. till dusk.

If only that terrible ailment "Gapes" can be avoided there is a good number of chicks ready for the higg'ler every week after the first batch of spring chickens is sold. The symptoms are frequent gaping and a short dry cough. The cause a parasitic worm, *Syngamus trachealis*, in the windpipe or trachea, where it congregates, always causing irritation, often blocking the air passages. It spreads from brood to brood with great rapidity, causing heavy losses. It may be destroyed by fumigation, but we prefer to avoid it by perfect cleanliness in the poultry houses, and by placing the coops where there is no possibility of *Syngamus* eggs or worms being taken up by the chicks.

When mention was last made of the Sussex poultry trade we told of a turnover of £80,000 a year at Heathfield. Thanks to an interesting paper by Mr. Edward Brown in the "Live Stock Journal Almanack," we are now able to show how marvellously the trade has grown. Quoting from the books of the railway company at Heathfield, he shows how from April, 1892, to March, 1893, 1350 tons of dead poultry were sent from that one station. Taking the average weight of each bird at 4 lbs., which is considered to be fair, that represents more than three-quarters of a million fowls (750,000). Precise information of the total extent of the Sussex trade in poultry cannot be given, but it probably exceeds 2000 tons per annum, which on the same ratio means 1,112,000 fowls. The exact value of the trade is not easily determined, the variation in value, both by reason of size and season, being great. But a large salesman places his average for the twelve months at 3s. 9d. Allowing the odd 3d. off for carriage, this would give us the total of £132,000 for Heathfield; or, for the entire county, if our approximation be correct, of £196,000.

We commend these figures to the attention of those farmers who regard poultry rearing as beneath them. When a party of gentlemen from the Board of Agriculture and the Royal

Agricultural Society, under the guidance of Mr. Brown, went through the district last spring, they saw the familiar fattening coops at every farm, and at many cottages. At the most extensive fatterer's, Mr. J. Olliver, who has three places for the work and turns out vast numbers of fowls, 500 dozen birds were being fattened, and he seldom has less than half that number. His weekly average of sales is from 1000 to 2000 chickens, the majority of which are sent direct to the south coast watering places. Of these only one-third are native birds, nearly two-thirds of those fattened by Mr. Olliver coming from Ireland, at a cost for carriage alone of 4½d. each. The fact is significant, as showing what might be done in other counties with home-reared birds, cheap corn, and steady persevering effort.

WORK ON THE HOME FARM.

Do not allow fowls to run out at all now, but confine them to the warm, snug poultry house and dusting place. We recently saw a large cart hovel, which had been connected with the poultry house, where dust lay thick beneath carts and wagons. The hovel had the sides boarded to the ground, folding doors at one end, and shutters near the ground on the south side to throw open on warm bright days, wire netting being fastened over the openings. On the day we saw it—a cold, windy, wet day, the shutters were closed; but there were glass "slates" in the roof for the admission of light, and the fowls were in the full enjoyment of dust baths, and in searching for the corn which had been thrown among the dust for them. Peat moss litter makes capital dust for poultry in winter where ordinary dust cannot be had. See that warm food is given regularly and carefully in view of the maintenance of a full supply of eggs either for home use, for sale, or for sittings for early chicks. Nothing in the way of farm produce is more profitable than eggs at midwinter.

Sitting hens must have the nests where the eggs cannot be frozen; where large numbers of chickens are required an incubator is altogether preferable if only proper shelter can be afforded the chicks. As a guide to this work we have to determine when spring chickens will be wanted. The calculation is then simple enough: three weeks for the hatching, and nine weeks for growth—not fattening. If fat chicks are wanted three weeks more will be required, so that we may say fifteen weeks are required from the date of placing the eggs in an incubator for the production of really fine plump birds. This involves shutting up selected chicks to fatten when they are nine weeks old. They are then crammed regularly three times a day with ground oats mixed with milk and melted suet into a thin paste, filling the crop each time, which is managed by keeping the left thumb upon the crop, and stopping instantly when it is full. Where cramming is not done the paste is fixed in a trough fixed to the front of the fattening coops; in either case the chicks are fed three times a day. By careful observation it has been found that there is an average increase of 2 lbs. in weight in the three weeks. Many spring chickens are sent to table when nine or ten weeks old, but they are small and unsatisfactory.

OUR LETTER BOX.

Dairy Utensils (D.).—By all means have a separator, you will then require no milk pans, and comparatively little dairy space. The most suitable for your purpose is the "Baby," which may be fixed on a table. Originally it would only do 15 gallons of milk per hour, but its improved form, termed the "Alpha Baby," separates 30 gallons an hour. Write for a catalogue of dairy utensils to the Dairy Supply Company, Museum Street, London, W.C.

METEOROLOGICAL OBSERVATIONS.

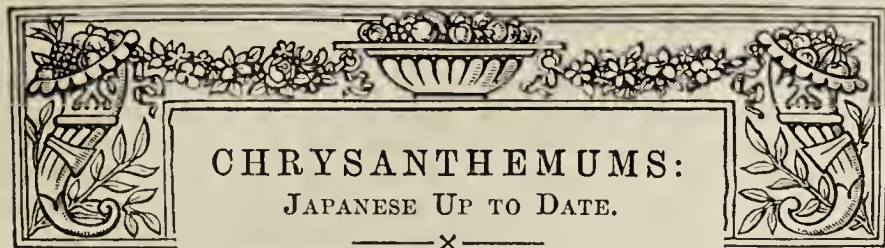
CAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude, 111 feet

DATE.		9 A.M.				IN THE DAY.				Rain.	
1894. January.		Barometer at 32°, and Sea Level.	Hygrometer.		Direc- tion of Wind.	Temp. of soil at 1 foot.	Shade Tem- perature.		Radiation Temperature		
			Dry.	Wet.			Max.	Min.	In Sun.		On Grass.
		Inchs.	deg.	deg.		deg.	deg.	deg.	deg.	Inchs.	
Sunday ..	7	29.903	21.8	21.1	N.	35.3	25.1	20.2	27.0	16.2	—
Monday ..	8	30.080	24.4	24.1	E.	35.0	37.1	17.1	37.2	15.3	0.141
Tuesday ..	9	29.815	36.1	35.2	E.	34.9	41.0	24.1	41.4	23.0	0.238
Wednesday ..	11	29.860	40.6	40.2	S.	34.6	48.7	29.9	50.8	26.2	0.026
Thursday ..	11	29.887	46.2	44.2	S.	35.1	52.0	41.2	65.2	36.4	0.116
Friday ..	12	29.963	47.4	45.9	S.	37.1	51.6	41.0	66.9	34.9	—
Saturday ..	13	30.049	45.1	43.3	S.	38.2	48.3	42.6	61.5	37.0	0.193
		29.937	37.4	36.3		37.7	43.4	30.9	50.0	27.0	0.714

REMARKS.

- 7th.—Fog all day, dense in afternoon and evening.
 8th.—Fine early, overcast after 10 A.M., fair afternoon and evening.
 9th.—Continuous rain from 5 A.M. to 5 P.M.; overcast evening.
 10th.—Almost continuous drizzle all the morning; fair afternoon and evening.
 11th.—Fine, with frequent bright sunshine.
 12th.—Rain from 1.30 A.M. to 3 A.M.; unbroken sunshine after 10 A.M.; clear evening.
 13th.—Fair early with gleams of sun; bright sunshine from 10.30 A.M. to noon; overcast afternoon and evening.
 A wet week of nearly average temperature.—G. J. SYMONS.



IN our issue of November 30th last year we published Mr. Mawley's analysis for 1892, founded on the number of times the varieties were exhibited in first prize stands at leading shows. Circumstances prevented the diligent compiler completing his work sooner, and we were aware that as compared with the varieties exhibited a year later the Japanese were not represented in up to date form. The returns were published in the usual way to prevent a break in the series, which as a whole represent the progress in Chrysanthemums and fluctuations in exhibits at the National Chrysanthemum Society's shows, in a form as complete as is attainable. The lateness of publication prejudiced the value of the 1892 analysis in the estimation of not a few readers, and as the *Journal of Horticulture* is not content to lag very far behind in Chrysanthemum lore, or any other lore for the matter of that, steps were taken to bring it abreast of the times. With the valued co-operation of Mr. E. Molyneux and forty other good men and true the object is accomplished.

In view of the publication of Mr. Mawley's analysis of 1893 (page 21, January 11th) it was not deemed necessary to ask for returns of incurved varieties, as the additions to them are few in comparison with their more fecund congeners the Japanese. Of these every year brings many new and effective forms, and old favourites are apt to fall considerably in public estimation in a year. For instance, *Avalanche*, which was no long time ago near the top of the list is, according to the latest returns, No. 18, while it does not even find a place in the varieties chosen for an ideal stand of twelve blooms. This is the most remarkable departure from the position of the variety in Mr. Mawley's analysis of last season's exhibits, where it stands No. 3 in the list on the page quoted. We thought it advisable to publish the list in question prior to the present returns of Mr. Molyneux, in order that our readers might compare the order of the varieties in each case, and draw their own deductions.

They will see that eight out of the first twelve in the present returns are included in the first twelve in the Mawley analysis, but they will also find remarkable divergencies. *Gloire du Rocher*, for instance, sinks from No. 10 in the list on page 21 to 32 in the present returns, both tabulations being founded on the last autumn shows; while Robert Owen, 14 on the Molyneux list, does not appear to be mentioned in the analysis, yet this variety finds a place in the ideal stand of twelve. It will be noticed that eleven out of twelve of these are found in the twenty-four list, but in different positions, *Mdlle. Marie Hoste* being put out by several voters in favour of Robert Owen, otherwise there would have been four whites instead of three, with *Mdlle. Thérèse Rey* at the head of them. It is time, however, to let Mr. Molyneux speak on the work he has done so well. He writes as follows:—

Acting on the suggestion of the Editor of the *Journal of Horticulture*, I issued invitations to forty-six of the leading private exhibitors and cultivators of this section of the Chrysanthemum to give a selection of what they considered the best twenty-four varieties, placing them in order of merit, also of twelve varieties, for making the finest stand, having regard to the colours of the blooms. The object of the election is mainly to assist those persons who are taking up the cultivation of this flower for the

first time, but it cannot fail to be of wide general interest. So large has been the increase in the number of varieties annually, that to those with but limited experience making a selection of the best kinds must be little short of bewildering. The electors were requested to name those varieties which they had either grown or seen staged during the last season. All but four responded to the invitation, circumstances beyond control preventing three of these from complying, a fact which proves the interest taken in the election by those concerned. All interested in Chrysanthemum culture appreciate the great amount of labour and care taken annually by Mr. Mawley in compiling his analysis for the benefit of Journal readers, and to his excellent work this election will form an appropriate pendant.

No less than ninety-three varieties have been quoted in making the desired selection, showing great divergence in opinion on the relative merits of Japanese Chrysanthemums. A few years since the bulk of new forms were obtained from sports, but now that the raising of seedlings has become purely a question of management, the lists are likely to grow extremely during the next few years.

The first twelve names given in the twenty-four selection is an absolute proof of the appreciation by the voters of what I term the real type of a Japanese Chrysanthemum, as compared with those having incurved florets. No matter how beautiful these may be, there is a danger of their coming too near the ordinary incurved section for insuring absolute distinctness. Robert Owen is acknowledged to take the lead in this type, and beautiful though it be, it hardly represents the true Japanese flower. Its colour, however, in the estimation of some voters, presumably found it a place in the stand of twelve blooms, and less than twenty of what may be termed incurved Japanese find a place in the total varieties named.

No one will be surprised to find *Vivian Morel* at the head of the list. Not only is this easy to produce, but its dwarf habit meets with great favour. Its latest progeny, *Charles Davis*, has come well to the front during its first year, and I expect to see this variety maintain its reputation. *Edwin Molyneux* and *Col. W. B. Smith* tie with *Vivian Morel* for the first place. The former is so well known as not to call for comment, *Col. W. B. Smith* has been such a short time in commerce that its position will come somewhat as a surprise. At the same time there is no denying its claim as one of the finest Japanese varieties we possess.

Undoubtedly the finest white-flowered variety at the present time is *Mdlle. Thérèse Rey*, and as such it is recognised by the voters, no less than thirty-eight having given it their support. *Florence Davis* is only four points behind, which proves the stability of this 1891 production. *Sunflower*, although five years old, still holds its own amongst yellows, and it is difficult to imagine a variety with more points in its favour. In spite of the opposition to *Etoile de Lyon* it still has its adherents. Blooms are often seen distorted and bleached; these do not represent the variety in its true character, but are examples of mismanagement. *Avalanche*, once so highly thought of, has fallen low down in the list, simply because larger blooms have come to the front. Exhibitors know that size, if unaccompanied with coarseness, is necessary now-a-days to win prizes. In this latter sentence lies the whole gist of the decline of this once popular favourite. *W. Tricker* has found many admirers; the somewhat backward season no doubt helped it.

Many persons will, no doubt, be surprised at the large number of new varieties mentioned. The bulk of them possess merit, but they have not been long enough in commerce to attain a higher position. Next season many of them will stand higher in such an election.

It is worthy of note that only one variety in the list is ten years old (*Boule d'Or*), the nearest approach to this being *Madame*

J. Laing, now eight years old. Such facts as these show the great advance made in the Japanese family during the last ten years.

VOTES FOR TWENTY-FOUR JAPANESE VARIETIES IN ORDER OF MERIT.

42	Vivian Morel	5	The Tribune
42	Edwin Molyneux	5	Beauty of Exmouth
42	Col. W. B. Smith	4	C. Shrimpton
40	Mdlle. Marie Hoste	4	Mrs. Beckett
40	Charles Davis	4	Le Verseau
40	G. C. Schwabe	4	Alberic Lunden
38	Mdlle. Thérèse Rey	4	W. W. Coles
38	Sunflower	3	Mdme. E. Rey
34	Florence Davis	3	M. E. A. Carrière
33	Etoile de Lyon	3	Primrose League
33	Stanstead White	2	Robert Flowerday
32	W. Seward	2	Richard Dean
29	Lord Brooke	2	R. C. Kingston
29	Robert Owen	2	Mdme. C. Molin
28	W. H. Lincoln	2	Violetta
27	Mrs. C. H. Payne	2	Mrs. Seward (?)
27	W. Tricker	2	Elmer D. Smith
27	Avalanche	2	Le Prince du Bois
23	Mrs. F. Jameson	2	Col. Chase
22	Golden Wedding	2	Mdme. Octavie Mirbeau
20	Excelsior	1	International
16	President Borel	1	W. G. Newitt
15	Miss Dorothy Shea	1	L'Isere
14	Mrs. E. W. Clark	1	Mrs. P. Blair
14	J. Shrimpton	1	Wilfred Marshall
13	Eda Prass	1	Rose Wynne
12	Beauty of Castlewood	1	Mrs. Bruce Findlay
11	Puritan	1	Cecil Wray
11	Boule d'Or	1	Coronet
10	Miss A. Hartshorn	1	Lilian B. Bird
10	G. W. Childs	1	Mdme. Cambon
10	Charles Blick	1	W. K. Woodcock
9	Gloire du Rocher	1	Mrs. F. A. Spaulding
9	Mrs. C. Wheeler	1	Mrs. T. Denne
9	Waban	1	Mr. E. G. Whittle
8	Mons. Bernard	1	Mdme. C. Audiguer
7	W. H. Lincoln Improved	1	Mr. G. Bryceson
7	J. S. Dibbens	1	Mrs. A. Hardy
7	Princess May	1	Mrs. A. Jacobs
7	Silver King	1	Lizzie Cartledge
7	Mrs. E. D. Adams	1	Amos Perry
6	Viscountess Hambledon	1	Mrs. A. G. Hubbuck
5	Violet Rose	1	J. P. Kendall
5	Vice-President Audiguer	1	Mdme. J. Laing
5	Louise	1	Sarah Owen
5	Duke of York	1	M. Jules Toussaint
5	Golden Gate		

VOTES FOR A STAND OF TWELVE JAPANESE.

42	Vivian Morel	3	Mrs. F. Jameson
40	Edwin Molyneux	3	Miss A. Hartshorn
37	Col. W. B. Smith	3	Mrs. E. D. Adams
36	Mdlle. Thérèse Rey	3	Beauty of Castlewood
30	Sunflower	3	Mrs. E. W. Clarke
28	Charles Davis	2	Madame C. Molin
22	Stanstead White	2	Gloire du Rocher
20	Etoile de Lyon	2	Madame Octavie Mirbeau
18	G. C. Schwabe	2	Charles Blick
18	William Seward	2	The Tribune
17	Florence Davis	2	Louise
17	Robert Owen	2	Madame E. Rey
17	Mdlle. Marie Hoste	2	Robert Flowerday
12	Avalanche	2	Duke of York
11	W. H. Lincoln	1	Golden Gate
10	Mrs. C. H. Payne	1	Mrs. E. G. Whittle
10	W. Tricker	1	Mrs. F. A. Spaulding
8	Boule d'Or	1	Mr. G. Bryceson
7	Excelsior	1	R. C. Kingston
7	G. W. Childs	1	L'Isere
6	Mrs. C. Wheeler	1	Cecil Wray
6	Golden Wedding	1	Mrs. T. Denne
6	W. H. Lincoln Improved	1	Col. Chase
5	Eda Prass	1	Beauty of Exmouth
5	Miss Dorothy Shea	1	Silver King
5	President Borel	1	Princess May
5	Lord Brooke	1	C. Shrimpton
4	Viscountess Hambledon	1	Elmer D. Smith
4	Mons. Bernard	1	Le Prince du Bois
4	Waban	1	International

The voters cover a wide area, thus rendering the selection so much more interesting. It is pleasing to find the leading Scotch cultivators taking part in the election.

Mr. R. Parker writes: "I quite agree with you that anyone anxious to form a collection at the present time would feel very

much at sea as to what they should leave out. A list drawn up as suggested will prove of great assistance."

Mr. Inglefield writes: "It is a capital idea to publish such a list, and I shall be much interested in it myself."

Mr. E. Beckett says: "I shall be very interested to see the returns, as I feel sure they will vary considerably."

Mr. C. E. Shea writes: "In preparing the accompanying lists I have been guided by your expressed wish of rendering assistance to persons who are taking up the cultivation of the flower for the first time. It is obvious that there are many varieties which in a selection for an expert would be included in the lists, but which one could not recommend to the beginner."

Mr. D. Forbes says: "I believe you are doing service both for young growers and old exhibitors. I hope the labour and trouble attending it may be appreciated by all Chrysanthemum growers."

Mr. J. Carruthers writes: "We northern growers would be very glad to see your list extended to forty-eight varieties, as we seldom have an opportunity of seeing for ourselves the new sorts, consequently we are compelled to buy very much on chance."

Mr. Renford says: "The *Journal of Horticulture* is rendering good service to those interested in Chrysanthemum culture in taking up such an important subject as the selection of varieties in the Japanese section."

Mr. G. Carpenter writes: "I think the idea a good one. I often feel quite in a fix what to procure in the way of novelty. Take Mr. ———'s catalogue for instance; I think it would even puzzle himself to make the best selection."

Mr. Rushton says: "I have pleasure in sending a list of Japanese Chrysanthemums most suitable for the north."

Mr. C. Orchard writes: "It is a good idea to prepare such a selection as proposed, and must prove useful to growers in general, although no doubt you will receive a long list for tabulation."

Mr. Ritchings says: "Such returns as is proposed must be serviceable to Chrysanthemum growers."

Mr. John Machar says: "I shall anxiously look for the report of the election in the *Journal of Horticulture*, for it will be interesting to all growers."—EDWIN MOLYNEUX.

[We desire to tender our best thanks to Mr. Molyneux and his able coadjutors in enabling us to publish the lists they have provided, and which will prove helpful to many. Mr. Carruthers will, we think, have no difficulty in choosing forty-eight varieties, as he appears to desire. If there should be a general wish that the individual selections be published we shall have no objection to inserting them. In order to test the matter we will have a little election on our own account. Let all readers who are in favour of the proposal say "Yes" on a postcard; those who are not say "No." The majority shall decide. If the votes are in favour of publication the names of the electors will appear, unless we hear from any of them to the contrary, in which case their desire will be complied with.]

HORTICULTURAL BUILDINGS.

"WHO loves a garden loves a greenhouse too," is a quotation forcibly illustrated by the many proprietors of the smallest gardens aspiring to a greenhouse, and though not grudging the first cost, it is the subsequent doctoring required to keep badly constructed houses from collapse that is not agreeable. I will make no apology for commencing in the humble way of an amateur's greenhouse, for it is in ratio to the garden what the palatial glass erections are to a nobleman's establishment. The former may be a luxury, though the latter are now considered necessities of the age we live in.

When a child in the old home, amongst some old books long since disappeared, was a garden book by one Abercrombie, doubtless a famous gardener of his time. In this book was detailed his triumph of producing a Cucumber for his employer's table on Christmas Day, and how proud this old gardener must have been on receiving a specially engraved medal for his feat. Doubtless the world went very well then, though it was but the shadow of coming events.

Happily for the amateur's greenhouse whose requirements are practically limited to sheltering its inmates from the extremes of our variable climate, and not reproducing so many cubic feet of India or Central America, his troubles are reduced to a minimum; but on the larger scale as stoves, forcing houses, and other names suggestive of the severe ordeal they have to undergo, they need good constitutions, and all thought that can be brought to bear on designing and building, to avoid as far as possible after annoyance.

In visiting my friends, I always have an eye to the structure of those buildings which mean so much to us gardeners, and one often has to lend a sympathetic ear to many a tale of woe. Indeed, in some cases one could almost imagine they had been inaugurated with a dedication hymn, "Brief life is here our portion," so many are the weak points observable.

Could we all go to those eminent builders who make this class of work a speciality, we should have but little to complain of, though some suggestion might be made, some new thoughts brought to bear on the subject that may have escaped even experts. The first cost of these houses may be higher, but it is better to pay the builder first than the doctor after. Yet many gentlemen have to consider the claims of local tradesmen, and though these be men of good repute, this class of work has not been their special study; in these cases the gardener might be allowed to express his ideas, and so wed practice to theory.

On my last visit to Straffan Gardens, Kildare, some old houses were being replaced by new ones which appeared to me perfection. There was not so far as I could see, and I tried to see, any place where water could lodge, either on wall plates, roof plates, or any of those nooks where it is generally found and always means incipient decay. As we are known by our works, so should those builders be. Though modesty forbids them being mentioned here, I will take it on myself to say that Mr. Bedford will not only be happy to show them to anyone interested, and many good things besides, but he ought to be proud to do so.

To turn again to the shady side of the subject, I shall be—well, not happy but content—to show here, from where I write (the Editor can point the road) some evil designed specimens, one an architect's conservatory, of which all I can say for it is that it was very expensive, "fearfully and wonderfully" made. As it is in iron and glass, it could doubtless be utilised for various purposes, except that of growing plants in, and, unfortunately, that is what is expected of it. In the dim religious light of many coloured lamps during a dinner party or other social gathering it does perhaps look effective, unless the night should be frosty, then huge condensed drops of icy cold water from a cupola-like roof coming down on ladies in evening dress is, to say the least, startling, but so far as stability goes it may be a trouble to gardeners yet unborn. Then again we have a small range of houses in the garden built against a wall on the hip span principle, with the inevitable lead gutter, and the inevitable plumber too frequently perched up in it, stopping out the wet and stopping it in after it has worked its way into the woodwork. I cannot but think these hip spans are a mistake. In appearance there may be a small advantage over a lean-to, but is there any other, unless it be that item before mentioned, viz., very expensive?

Paint is of necessity an important matter, but costs nothing, so the proverb says, but wisely did not mention painting—the application of the material, which does cost a good deal in these days, and many a labourer wielding the spade is apt to draw invidious comparisons in the matter of his pay and that of the man who sits like a cherub aloft wielding the brush. In the matter of painting in the interior of houses we have some reason for poaching on our neighbour's trade, and a good deal of this work is done by hands on the place where a professional painter is not kept. Apart from consideration of expense, it is seldom convenient to clear the decks for a contractor's staff; but in the short days of winter, and outside work weatherbound, a couple of handy men, though perhaps not quite up to professional work, can do it fairly well, and the advantage of their knowing the plants must be respected is an undoubted one. Where this work is left for contractors to do the evil day is put off as long as possible. Where we do it ourselves one coat put on annually between autumn and spring gives the houses a fresh and clean appearance that no amount of cleaning will, added to all the virtues that paint possesses at a trifling cost. The best white lead mixed to a creamy consistency with drying oil, some turps, and a little blue, just to give that tone of colour that a laundress gives to her linen; no driers. This is my experience of the best paint for our houses. If for outside work very little turps should be used, as it has a tendency to perish the lead.

Doors and locks are, after a certain age, very troublesome, and I think there are but few gardeners who have experience of this annoyance—doors that will not open; when open, will not shut, nor catch, nor lock when wanted; these are a perennial nuisance. Here I should like to ask those eminent horticultural builders why we cannot have iron doors and door frames and a damp-proof lock? They could be made ornamental, panelled, two panes of plate glass in the top half, practically as light as wood, galvanised, painted, and grained to represent any wood; a renewable rubber fillet on the frame would prevent concussion. I hope this suggestion may be noticed, and that I may yet see it *un fait accompli*.—E. K., Dublin.



DENDROBIUM ATRO-VIOLACEUM.

THIS is a very distinct Dendrobium, and when a plant was exhibited by F. Wigan, Esq., Clare Lawn, East Sheen, S.W., at the Drill Hall, James Street, Westminster, on Tuesday, 16th inst., considerable attention was centred upon it. The plant alluded to bore two spikes of flowers, one of which is represented in the engraving (fig. 10). The blooms are exceedingly beautiful, and merited the first-class certificate that was awarded. The sepals and petals are light yellow spotted dark maroon, the lip being pale green and rich violet.

ONCIDIUM ORNITHORHYNCHUM.

This Oncidium appears to thrive equally well in the cool house or in a warmer one, and my success, says a correspondent



FIG. 10.—DENDROBIUM ATRO-VIOLACEUM.

in the "Garden and Forest," with a plant originally presented induced the purchase of twelve others, more especially because of their agreeable spicy but quite undefinable fragrance. The original plant was obtained two years ago in a 4-inch pot, and owing to the way the plant has of making two growths each year from the last-made bulb, it is in a 9-inch pan, and recently was a fountain of charming pink flowers; the spikes are much branched, many of them 2 feet long, and the foliage of a rich green. There is a white form of this Oncidium, at present extremely rare in cultivation, but very beautiful.

O. ornithorhynchum is an easy plant to grow, and appears to need no resting period, as the young growths start before the flowers have faded each year, and the bulbs increase in size until they become as large as hens' eggs, and these produce two the next season. Repotting is done directly after the plants have past flowering—that is, during the fall months. I have had plants in bloom for three months, and the small sprays are very useful

for boutonnières because of their airy grace and fragrance. The specific name of this *Oncidium* has reference to the peculiar appendage to the anthers, which seem to resemble a bird's beak.

POLYSTACHIA BUCHANANI.

This species bears much resemblance to *P. luteola*, Hook., from Tropical America, and *P. mauritiana*, Spreng., from the Mascarene Islands, and like them has light yellowish-green flowers with a faint trace of purple-brown near the margins of the sepals. It has been in cultivation for several years, having flowered in the Royal Botanic Garden, Glasnevin, in September, 1889, and in succeeding years. According to the "Kew Bulletin" it was sent from the Upper Zambesi district by Mr. John Buchanan to Mr. James O'Brien, Harrow-on-the-Hill, who has now sent it to Kew for determination. Among African species it may be compared with *P. rufinula*, Rehb. f., which has cinnamon-brown sepals, longer bracts, and larger flowers, though in habit and general character the two are nearly allied.

CYRTOPERA PAPILLOSA.

From the same source we learn that this is a very distinct *Cyrtopera*, comparable only with *C. foliosa*, Lindl. (Hook. Comp. Bot. Mag. ii. p. 203) collected by Drege in Kaffraria, between Basche and Omtata, which has three keels to the lip, a much smaller papillose disc, and various other differences. *C. papillosa* was collected by Sanderson as long ago as 1864, and has recently been imported by Mr. James O'Brien of Harrow-on-the-Hill, from the same district. It flowered in the collection of Sir Trevor Lawrence, Bart., of Burford, Dorking, in August, 1892, and, more recently, with the importer. The flowers are yellow, with the exception of the side lobes of the lip, which are purple-brown. The name is given in allusion to the numerous papillæ in front of the keels. The foot of the column is well developed, but the spur excessively short.

SOBRALIA PUMILA.

This, the same authority remarks, is an unusually small plant for a *Sobralia*, of which a dried specimen has been sent for determination by E. S. Rand, Esquire, of Pará, Brazil. The plant is noted as "forming small tufts, the pseudo-bulbs seldom exceeding 3 inches in height. Flowers bright canary yellow, but very transient, lasting only a day; produced in profusion. Foliage very dark green." It is allied to the New Granadan *S. fimbriata*, Lindl., which, however, is more than twice as tall, and has larger flowers borne on shorter pedicels. The veins of the lip are crested, but it is difficult to make out their exact details, owing to the difficulty of dissecting out such excessively membranous flowers when once dried.

MANURING ORNAMENTAL TREES AND SHRUBS.

TREES of any description, so long as they are in a thriving condition, are objects of more or less beauty. Old trees even in decay may be termed beautiful or picturesque; but when we notice young trees which should each year be increasing in size and strength, begin to turn pale in colour or lose their lower branches, exhibiting also numerous dead twigs in many of the remaining ones, our sense of beauty is violated, and we look upon such as unsightly objects.

Want of thinning at the proper time is often the cause of this state of affairs; but upon that aspect of the subject I do not intend to enter now, as it has been recently dealt with in the pages of the *Journal of Horticulture* by several able contributors. There is, however, another cause which produces the same effect, and which is well worthy of the attention of all who wish to see the trees under their charge in a healthy condition. I allude to poverty and shallowness of soil.

Those who have charge of gardens in districts where deep rich loams abound can scarcely realise the amount of feeding shrubs of many kinds, when growing in sandy or gravelly soils, require in order to keep them in really good condition. Much can, of course, be done at planting time to ensure future success by digging holes 6 feet in diameter and from 3 to 4 feet deep for all permanent trees. The soil should then be thoroughly enriched with manure as it is returned to the holes, and if possible a little good loam or leaf soil obtained for placing in immediate contact with the roots. Trees planted in stations thus prepared are not likely to suffer greatly from want of nourishment for the first ten years; but even in such instances an annual top-dressing of manure has a wonderful effect upon the health and vigour of their growth.

Frequently I have to deal with trees which for some reason have been planted without much preparation being given to the

soil beyond digging a hole merely large enough to accommodate the roots. When this is done in poor shallow soils the trees so planted present a poor appearance after a few years. An excellent way to improve them is to dig a trench around the tree at a distance of from 4 to 6 feet from the stem, according to the size of the tree. This trench may be a couple of feet wide and 3 deep. Plenty of good manure and burnt refuse should then be mixed with the best of the natural soil, and when mixed returned to the trench, treading it firmly as the work proceeds. The whole surface of the soil from the outer edge of the trench to the bole of the tree may then, with advantage, receive a coating of manure or leaf mould.

If time for cutting out trenches cannot be spared much good may be done by applying a top-dressing of manure several inches in thickness, and by emptying the contents of cesspools upon the surrounding soil. In some instances I have found weakly grown trees much improved by adopting the following plan, which I remember reading about a long time ago in the *Journal*, and after a lapse of twenty years have had an opportunity of testing, and I am now pleased to advance it for the benefit of others. Procure an iron rod sharpened at the point, and about an inch in diameter, drive this into the soil (as far as the branches of the tree extend) to a depth of 18 inches or 2 feet, then fill in the holes with a mixture of well decayed manure and wood ashes in equal parts, each being sifted, finish off by adding a coating of manure to the surface. I should have mentioned that the holes may be made 9 inches asunder.

Many of the best kinds of *Coniferæ* make but poor, stunted growth, and never display their true character, unless they are either grown in deep fertile loams or receive special attention in the way of manure as above advised. Fortunately, however, such stately members of the family as *Cedrus Libani*, *C. Deodara*, Scotch Firs, and Yews adapt themselves to dry, poor soils much better than the majority of *Coniferæ*, and as they frequently develop into some of the grandest specimens of arboreal beauty which adorn the gardens of many lands those who contemplate planting on poor soils should see that these are freely employed. —D. W.

POTTING BEDDING PELARGONIUMS.

THE too frequent practice of employing "waste" potting soil for this purpose is not one to be commended. True, it frequently answers the purpose well, because the composition of the waste soil heap varies a good deal, and sometimes a large percentage of sweet rich material is incorporated with it; but I am firmly convinced that more failures, or partial failures, than successes may be traced to the use of old and poor soil. Even in those instances in which the plants appear to thrive fairly well in such uncertain mixtures, they will bear no comparison for strength and sturdiness of growth with others which are potted in good loam, but which receive precisely the same treatment in other respects.

Scarcity of good soil may be urged as a reason for employing the refuse for potting plants. Where such is the case the difficulty may be overcome by wheeling the waste soil to the kitchen garden (where it is often of great service on seed beds), and using good garden soil, with liberal additions of sand and leaf soil, for potting purposes. In those places where maiden loam can be had in abundance it is sound policy to use it as the principal ingredient in the compost prepared for Pelargoniums. The fibry portions need not necessarily be used, but that which is shaken out when preparing turfy loam for stove or greenhouse plants, and this, with the addition of one-third leaf soil and a little sand and burnt refuse forms an ideal compost for bedding Pelargoniums. Potted firmly in this, and kept in a fairly good position, no long-jointed growth is made; plants of dwarf compact habit are therefore the result, and all who have a good stock of this description may rest contented that they will flower freely when planted out.

In those instances where waste potting soil must perforce be used, a regular system of sweetening and enriching it ought to be practised. The plan I have sometimes adopted with good results is the following:—Waste soil of various descriptions is placed in a heap throughout the year to be dealt with in the winter, when it is made into stacks. Six inches of fresh stable manure with the rough portions shaken out is first spread upon the ground, and this is covered with a layer of waste soil a foot in thickness. Next follows a couple of inches of burnt refuse. The alternate layers are then repeated till the whole of the soil is used. The heap is, of course, finished off in the form of a ridge to throw off heavy rains. If possible, the heap is left undisturbed for a year, by which time the manure is sufficiently decayed, and the whole forms a mellow compost, in which a host of bedding plants grow well. I would strongly advise those who have habitually potted their bedding

plants in waste soil, and have not been quite satisfied with the results, to put the last-named plan into practice, or rather prepare for doing so another year, by mixing their soil at once, and in the meantime employ good garden soil if fresh loam is not available. I like to place the garden soil upon the stonework above a boiler at work for a few days before using it, to kill any insects it may contain. Should the soil in which the plants are growing be dry, a thorough watering ought to be given the day previous to the one on which they are potted. Both leaves and roots are then fresh and plump, a condition in which they are able to speedily recover the check consequent upon potting. Thousands of plants are annually weakened in constitution and caused to shed a large proportion of their leaves through the non-observance of these simple details.

Sometimes, through lack of space, bedding Pelargoniums are much crowded during the winter months, with the inevitable result that they become "leggy." There is then great temptation at potting time to bury a portion of the stem, in order to secure dwarfier plants. It is, however, a most dangerous practice, which causes many to decay at the collar. A much better plan is to pinch the point out of tall plants a couple of weeks before they are potted. This will cause them in many instances to send out shoots from the bare stems, and eventually develop into fairly compact plants.

When the potting soil is used in a moderately dry condition, and the plants are arranged in a house or pit where a gentle heat is kept in the hot-water pipes, a moderate watering should be given through a rose as soon as a good batch is potted. When, however, it happens to be moist enough to adhere in a mass when pressed in the hand, watering ought to be deferred for a day or two. Three-inch pots with a little rough leaf soil placed in the bottom, and one plant set in each pot, is the method of potting which I prefer. Many good cultivators advocate placing two plants in a 4½-inch pot; but as under such circumstances the ball has to be divided at bedding-out time, a greater check than is desirable is given at that critical time. In very hot summers this is no mean consideration, and the drawback in this respect is not compensated for by any advantages which may be claimed for the two-in-a-pot system.—FLOWER GARDENER.

PRICES OF GARDEN PRODUCE IN 1893.

THE prices obtained for garden produce during the past year were lower than at any time in recent years. A reason for this is found in the generally depressed condition of commerce in this country. Another cause, which is perhaps not so apparent, is that the amount of fruit, flowers, and vegetables placed before buyers is increasing every year, and naturally it is only by means of an equally large influx of buyers that so much extra produce can be sold. This, again, can be secured only by the admission of a class whose purchasing power is low, and in consequence what these buy must be cheap. No doubt this condition of the buyers acts reflexively on the market, and causes it to be flooded with produce of an inferior quality; this in turn deteriorating the value of the best class of material. If the hope could be cherished that this is only a passing or a local condition of trade the outlook might be considered with a degree of serenity, but I am told by those who are cognizant of the state of trade that prices have exhibited a down-going tendency for years, and that though those of 1893 have been abnormally low, nevertheless they were only the latest of a series.

This is a state of matters which calls for sympathy towards those men whose living or fortune depends so closely on the rate of current prices, but unfortunately besides these there are many gardeners, who, if not financially affected, are nevertheless embittered by a want of sympathy on the part of employers who look for a certain sum to reach them from the salesman wherewith to meet garden expenses. While that is so, it is pleasant to know that all gardeners who are expected to provide an annual contribution towards expenses are not so unhappily situated; but those of the first-named section are unable to do anything to avert this lowering of prices from affecting them injuriously, because they are allowed neither the opportunity nor the means of altering methods, or of growing such crops as they find to be most remunerative. In all, or most cases however, circumstances provide a limit as to what may be cultivated in gardens, because first of all the tastes and requirements of the owners have to be considered and catered for; and sometimes altogether outside of these material for profit has to be provided. Personally I have found this to be so. Some crops, no matter how remunerative they might prove, are not allowed to be sold. Others may be sold at certain seasons only, and those not always the best; but outside of these I have no restrictions. This is the only way a gardener can do justice to himself and to his employer. There is a proper understanding on each side, and if the gardener is anxious to succeed falling prices fail to affect him to any great extent. He

will note any crop that is falling rapidly in price, and in the future as little as may be of such crop will be grown.

Flowers in particular depreciate in value in a remarkable manner. Less than twenty years ago white Camellias commanded a ready sale at remunerative prices, but for several years past they have been of slight commercial value. Gardenias have also depreciated in value; so have Stephanotis, Eucharis, and Coeloglyne cristata. I could name other flowers which a few years since brought good prices which are now practically unsaleable. To say that many gardeners continue to cultivate flowers which have been superseded is to state what is a fact.

With fruits which have decreased in value there is this difference to be noted as compared with flowers. The value of the latter depends largely on fashion; those, on the other hand, are necessities, the value of which, to a great extent, is guided by the quality of the produce when placed before purchasers, and the supply.

I am cognizant of a number of instances which occurred during the past year, when inferiority and superiority was in the ratio of one to five. As examples, I am aware of Malmaison Carnations being sold at 3s., 8s., and 12s. per dozen; of Chrysanthemums, on the same day and in the same sale room, realising 1s. 6d. to 24s. per dozen bunches; of Tomatoes, from 1d. to 6d. per lb.; Apricots, as low as ½d. per lb., and Apples ranging from 1d. to 3½d. per lb. These are extreme cases, but they serve to illustrate what I am endeavouring to show, that no matter how crushed the condition of the market may be, there is almost always a demand for high-class produce when placed in good condition before the buyer. Nobody wants that which is inferior, while everybody desires a share of the best; and it often happens that customers wait for supplies if they know it to be good who would never give it a second thought if slightly inferior.

Now for a few words with regard to salesmen. It is quite common to see the character of these gentlemen presented in a very unfavourable light. I have done business with not more than three, during the past year mostly with two, and I have not only no fault to find with them, but I have something to thank them for. Both have advised as to the time and manner of sending certain articles, and as in every way I have tried to meet their wishes, so have they done the best with what I sent. While that is so I have heard both salesmen severely criticised for the prices they secured; but I have a shrewd guess that the blame was not fairly distributed, for if they get superior produce they return good prices.—B.

THE INTERMEDIATE SEASON IN A SCOTTISH MANSE GARDEN.

SINCE I wrote my last contribution to the *Journal of Horticulture* we have experienced the severity of an abnormally hard frost, immediately followed and greatly mitigated by a heavy fall of snow. The latter has now entirely disappeared, vanishing almost as rapidly as it came, and its beneficent influence upon Nature is already visible in the aspect of my garden, which for some days has presented the characteristics of early spring.

The Snowdrop, as I anticipated, has come somewhat sooner than usual this year. This pale and pensive flower, so greatly loved by botanists, poets, and florists, is the parent of hope; it seems to speak to the thoughtful spirit of bloom and beauty and fragrance yet to come. It is always associated in my memory with the first notes of the thrush, our Scottish nightingale, for in this region at least they are often contemporaneous. The song of the skylark is considerably later in reaching these solitary shores, and may be described as a beautiful contemporary of the Daffodil. It is an exquisite association that of birds with flowers, and perhaps the oldest of such tender imaginings on the part of the poet-naturalist is that which associates, and has always associated, the nightingale with the Rose. I only wish that the former could be as easily introduced as the latter into the gardens of Scotland, and with equal effect. In the absence of Philomela, Horace Vernet and Innocente Pirola, Cloth of Gold and L'Idéal are abiding consolations. And have we not in unison with these the melodic utterances of the skylark, the ringdove, the merle, and the thrush?

Around me, as I write from this tranquil, rural, sequestered manse, there are many indications of an early spring. The Snowdrops are already in full bloom. The Narcissus—so much loved by my friend Mr. F. W. Burbidge, who has so often recorded its glories in most poetic prose—is everywhere growing with remarkable rapidity. The steadfast bloom, untouched even for a period by the recent frosts, of the winter-flowering Jasmine, which is the alpha and omega of the floral year, consoles me for the comparative failure this season of *Helleborus niger*, the Christmas Rose. But it should be remembered, in justice to the representative

flower of December, that the terribly exacting tropical breath of last summer destroyed its leaves, and that it has not yet had time to recover its normal strength.

Lilac Primroses are at present in luxuriant bloom. *Lilium candidum*, the vigorous Madonna Lily, is a veritable evergreen; *L. longiflorum* *Harrisi*, which so greatly glorified my garden last summer, has for some weeks been steadily growing above ground. It has not been affected in the slightest degree by the recent severe atmospheric visitation, though I have always been assured that if it was planted in November in the open ground, and grew (as is its tendency) prematurely, the frost would cut it down. It has, nevertheless, withstood heroically the severest weather we have experienced in Scotland for many years. *Lilium candidum* and *L. longiflorum*, though invariably the first to make their ever-welcome and hope-imparting appearance above the soil, are by no means the earliest to come into flower. Nature has reserved this honour for *Lilium davuricum* (sometimes called *umbellatum*), a lustrous native of Siberia, which last year was in full bloom in the Royal Gardens at Kew in the middle of May. It is closely allied to *Lilium croceum*, which, though one of the most familiar, is also one of the most beautiful of Eastern Lilies.

Among the Roses which I have recently introduced into my garden are *Corinna*, *Duchess of Albany*, and *Princess May*, *Waltham* productions of much interest and attractiveness; *Mrs. Harkness*, which bears the name of its Yorkshire raisers; *Miss May Rivers*, an exquisite Rose, possessing highly artistic associations; *Waban* and *The Bride*, charming daughters from America of Catherine Mermet, which I have planted for the sake of comparing their characteristics side by side; and the famous *Grimson Rambler*, a brilliant representative of the *Polyantha* family from the Royal Nurseries at Slough. All of these are distinct, and splendid acquisitions.—DAVID R. WILLIAMSON.

THE LATEST ABOUT EARWIGS.

THE name of this insect used to be familiarly given to a person who was apt to pour malicious tales into people's ears, acting insidiously, after the manner of an earwig. The allusion is so far interesting, as it shows the prevalence of a belief that the insect had a fancy for entering the ears of men or animals, and in consequence the popular name has been the subject of much discussion. Several entomologists of note have endeavoured to prove that the rightful name of this insect is the "earwig," because the wings, which are beautiful objects when unfolded, have some resemblance in shape to the ear. But really, it is not likely that many centuries ago anybody had observed these wings, and this seems an afterthought. It is an insect fond of hiding in dark places, therefore it would not be surprising were one to creep into the ear of a person lying on the ground for instance. Still, as the result of inquiries amongst gardeners and many others, I must state that I have never yet had proof that an earwig entered the ear of anyone, though I have known fleas and small beetles do this.

Some doubt has been expressed whether earwigs use the forceps at the tail as a weapon. They certainly do so, but not readily, and indeed they do not seem dexterous in wielding the forceps for that purpose. This may be easily demonstrated if one be thrown into a spider's web. It will try desperately to strike the spider, but never succeeds, but these useful spinners do not help to reduce the number of earwigs, as they seem to dislike them, and eject them from their webs. I have had several instances of persons getting a sharp nip from an earwig, the forceps taking effect even through a glove. Sometimes the pain is severe during a short time, and a mark is left which remains for several days. In the garden, however, our chief complaint against the earwig is its biting propensities as exercised upon flowers, leaves, and fruit, more particularly the first. Of all favourite flowers the Dahlia is an earwig's speciality, but the insects devour the petals of many species, and last season, when they were very abundant, they were frequently found lurking in the blooms of China Asters and Chrysanthemums. The grower of Roses finds the earwig infesting his favourites, lodged, it may be, in the matting by which a standard tree is tied to its support, or hidden in the fork of a branch. Earwigs also conceal themselves in leaves that are folded over or curved from some cause, such as the operations of a Tortrix caterpillar. Fruit also attracts earwigs, especially what is full ripe or partly decaying. No insect, perhaps, can be said to be more dexterous in concealing itself when mature, and while juvenile it exercises equal caution; indeed, its life is then chiefly passed under the soil. During the winter it is easy to discover earwings under the bark of trees, often in small parties, and occasionally near the ground we detect a family party, consisting of earwigs in various stages of growth, the juvenile specimens being paler than the adults, also lacking

forceps and wings. Evidently the winter does not kill all our enemies of the summer brood; some survive till spring. It is likely most of these are females, the attention of which to their progeny is one of the marked peculiarities of earwig life. As, whether young or old, an earwig has no skill in digging, it cannot burrow into hard ground, and prefers moist, loose earth in its early stage, but we may find them sometimes under heavy stones, and wonder how they came there, with other companion insects.

Seldom as is the common earwig noticed in the act of flying, the summer of 1893 proved positively that the species can use its wings freely, for swarms were found in the upper rooms of many country houses, to which they had not climbed by use of their legs. They were often noticed close to the windows in the act of closing up their wings, this operation being carefully performed by the forceps. Each wing is first made into wrinkles or folds, like those of a fan, then it is dexterously turned over and doubled. Some have thought the insect has also to open out its wings with the forceps. This seems not to be the case; they are expanded by the influence of the air. Doubtless the earwig gains access to stoves and plant houses, as well as dwellings, by means of its wings; but the common earwig is not partial to flying. The little earwig (*Lebia minor*), a species not so frequently observed by gardeners as is its relative, is rather more inclined to fly both by day and night. Neither species, however, can accomplish any migration to a long distance off. What caused the profusion of earwigs in many districts during the summer of 1893 still remains unexplained. Throughout the south of England they were about earlier than usual, owing probably to the warmth of the summer, and at the time they generally infest Dahlias there was a marked reduction in their numbers.

With some insects we are able to adopt preventive measures by destroying part of the brood while they are in the egg state; but this is not possible with the earwig, since the eggs are only occasionally seen, the mother insect hiding them under stones or loose earth. Entomologists state that she watches these most carefully, and will even remove them from one place to another if they are in any danger. It is likely that the fibrils of roots afford the chief food to young earwigs, but friends of this insect have suggested that at all ages it is sometimes predatory, and several times one has been noticed carrying a small insect in its jaws.

Some Continental naturalists have asserted that the larvæ of the troublesome Hessian fly are hunted for and then devoured by earwigs. A correspondent of one of our scientific journals tells us that he has repeatedly watched conflicts between ants and earwigs, and in these the ants are invariably the victors by sheer force of numbers, the slaughtered earwigs being then carried into the ants' citadel. For awhile, however, an earwig will make desperate resistance, and succeed in killing some of the ants by impaling them upon the forceps. Many of our gardeners trap earwigs by the old plan of inverted flower pots put upon sticks, and we may still see lobster claws in cottage gardens similarly employed; but the best earwig traps are small tubes a few inches long, plugged at one end, and hung with the open end downwards against a stem or stick. During the night many enter these, and they can be easily shaken out and killed. A friend reports that he has destroyed hundreds by the yet more simple expedient of lodging in shrubs and garden hedges sheets of newspaper loosely folded, which capture not only earwigs but other insects.—ENTOMOLOGIST.

BRUSSELS SPROUTS.

WHEN recently at Hackwood Park, Mr. Bowerman drew my attention to a breadth of Dwarf Gem Brussels Sprouts, of which he spoke in the highest terms as being so specially suited for culture on rich deep garden soil. The plants range to a height of about 16 inches, and were literally covered with firm green sprouts, round as bullets. Elsewhere, for earlier work, were breadths of Northern Prize and Paragon, both excellent forms, but they had lately given off their produce. The Dwarf Gem seems to be specially suited for late sprouting, and if the stems be less tall than are those of large-sprouted varieties, at least the plants can be put out much closer together. The common tendency to grow Brussels Sprouts far too large and coarse in rich soils, is to be regretted. Not a few other vegetable growers have ere now found that out, hence the value to them of a variety that gives all that can be desired in sprouts on soils that must be kept deeply worked and enriched for the benefit of other crops.—A. D.

BRUSSELS SPROUTS DECAYING.

I SHOULD like to ask your numerous contributors whether they have noticed any marked increase in this evil during the past two months. It always appears to be a point upon which we require enlightening. Some seasons it is far more prevalent than others. Last year I noticed very little of its bad effects, but it is very bad in some places this year. Most of us are ready to believe the large sprouts are more liable to the evil than the little firm bullets produced by some varieties. Although

I incline to that opinion myself I do not follow it entirely, for I have repeatedly seen instances where it has not occurred. This season I know a very fine quarter of the Aigburth, a well-known variety, and particularly adapted for certain classes of soil. To look at the sprouts they appear as firm and sound as one could desire; but on cutting them open with a knife they are found to be decayed, not the heart as it were, but at the dome of the sprout. I found the younger sprouts were quite free from this evil; it was only to be found in the older ones. To show this state of things is by no means general I looked over another plot of the same variety in a different district; the sprouts were equally well grown, but I failed to find a single bad one.—J. B. R.



THE WEATHER IN LONDON.—Mild, damp weather prevailed in the metropolis during the past week, the daily mean temperature being, according to the official records, between 6° and 7° higher than the average of the corresponding week for the past fifty years. On the 22nd it rained nearly all day, but since that date a change has taken place. At sunrise on Wednesday morning the thermometer registered 8° of frost in London, and at the time of going to press the weather appears settled.

— **WEATHER IN THE NORTH.**—There has been a good deal of rain during the last week, and high winds have been frequent. Scarcely a day has been dry throughout. Sunday was particularly disagreeable from heavy rain, but improved somewhat in the evening. Monday was a little showery; the evening was fine, and on Tuesday morning there were 6° of frost. The hills are again white with snow.—B. D., *S. Perthshire*.

— **KNOWSLEY HALL GARDENS.**—After having had charge of these noteworthy gardens for many years, Mr. F. Harrison the highly competent gardener has retired. Mr. Harrison's work has been of the best, and he was much respected in the neighbourhood. He is succeeded in the important charge by Mr. Robert Doe, who has managed Lord Savile's gardens at Rufford Abbey so well for a number of years, and whose excellent work was described in the *Journal of Horticulture*, page 308, October 5th, 1893.

— **THE LATE MR. W. INGRAM.**—We are informed that the Duchess of Rutland attended the funeral on the 13th inst. of Mr. William Ingram, the late head gardener at Belvoir Castle, and in accordance with the custom on the estate, for rich and poor alike, the coffin was borne on a low platform having sloping sides dressed in black on a lorry drawn by two black horses. All the servants attended, as also a squad of the 1st Battalion of the Leicestershire Regiment. Kington church was crowded, and the interment took place under a Yew tree planted by the deceased thirty-five years ago over his son's grave. As mentioned in our issue for the 18th inst., Mr. Ingram, who had been at Belvoir since 1852, and was known to numberless visitors of distinction, was the eldest son of the head gardener at Windsor Castle at the time of William IV., and was himself in the gardens at Frogmore, and in the service of the Emperor Napoleon III.

— **THE EARL'S COURT PRIZE MONEY—AN APPEAL TO MR. H. TURNER.**—It is some months since that a letter appeared in your paper from Mr. Harry Turner, that owing to the illness of the Financial Director of the Earl's Court Flower Shows the money due to prize-winners was not forthcoming, also leading them to suppose that on his recovery the amounts due would be paid. The death of this official has been announced, are we therefore to conclude that the payment of the money for prizes is as far off as ever? Surely we may expect that after what Mr. Turner has stated he will be glad to take steps to have justice done to those successful gardeners who did so much for the shows under his control.—DISAPPOINTED.

— **THE WOLVERHAMPTON FLORAL FETE.**—As mentioned in the *Journal of Horticulture* for January 4th, the dates fixed for this important Exhibition are July 10th, 11th, and 12th, and the schedule to hand shows that the liberal prizes have been still further augmented. An additional £20 have been added to the large groups, and special prizes are offered for groups of hardy flowers, and collections of

Violets and Pansies are to be encouraged. Increased prizes are also to be given to collections of vegetables. There is a reserve fund of £1800. The leading prizes offered include for sixteen stove and greenhouse plants: £20 first, £15 second, £10 third. For a group of plants: £20 first, £15 second, £10 third, and £5 fourth. These and others proportionately large should bring forth a good display.

— **MR. BRUCE FINDLAY.**—In recognition of his services to horticulture, especially as one of the most successful organizers and promoters of exhibitions, a movement is on foot for providing an appropriate presentation to Mr. Bruce Findlay on the completion of his thirty-sixth year as Curator of the Manchester Botanical Gardens. A representative Committee is being formed, with Dean Hole as President, for carrying out the project. Mr. J. H. Goodacre, Elvaston Castle Gardens, Derby, is Honorary Secretary; and Mr. Owen Thomas, Royal Gardens, Frogmore, Treasurer of the Fund. We commend the project to those of our readers who may like to share in the honour of recognising the valuable services of an indefatigable worker and an estimable man.

— **HORTICULTURAL CLUB.**—The usual monthly dinner and conversazione took place on Tuesday evening last week at the rooms, Hotel Windsor; Mr. George Paul occupied the chair. Amongst those present were the Rev. F. H. Gall, Messrs. Cousens, Shea, Ashbee, H. Selfe Leonard, H. Seebohm, Bunyard, Cockett, and the Secretary. The subject for discussion was "Bees and their Agency in Horticulture," which was opened by the Secretary, who detailed the experiments carried out by Sir John Lubbock and others, and showed that some of the ideas entertained on the subject had been either exaggerated or were erroneous. Thus it was clearly proved that when bees had found honey they did not communicate it to their fellows. He also questioned the notion that they preferred blue flowers, from observations in his own garden. The agencies of bees in fertilization had, he thought, been over-estimated, believing that this is more carried out by currents of air than by them. A very interesting discussion followed, in which most of the members took part, and Mr. Bunyard, in detailing his experience with regard to orchard houses, stated that bees were utterly useless, as they immediately flew to the glass. Mr. Ashbee also stated some of his experiences in bee-keeping, and a vote of thanks was given to the Secretary for his address. It was announced that the annual meeting would be held on February 13th.

— **STACHYS TUBERIFERA.**—There can be no doubt that this tuberous root owes its position on the dinner table very much to the way in which it is cooked. When at one garden recently, where this *Stachys* is largely and well grown, I found that it was not at all popular with the family, and at another place the gardener finds it very difficult to keep up the supply, the root, doubtless because so efficiently cooked, being so popular in the house that it is looked for almost every day. There, on a warm border that is well prepared by trenching and manuring, the selected tubers for the purpose are planted in rows 18 inches asunder and 12 inches apart in the rows, the tubers being the finest I have seen, but then they are not so numerous as is usually the case. I have had some of these cooked by gentle boiling first in a little quantity of water. This was poured off, then milk was substituted, and finished in the oven; with a little melted butter and some salt the roots were very delicious.—A. D.

— **THE PRICE OF NEW PANSIES.**—It is refreshing to read the remarks of "W. D." (page 56) on this subject. It is quite time an innovation took place in this respect. All my Pansy catalogues have arrived during the past three weeks, and though I have not yet scanned them through, I noticed at once that some of the growers are quoting the new varieties at half the usual price, and I hope after "W. D.'s" remarks the large growers will also take the hint. I feel quite sure that many more plants will be sold under the new system, for many would-be growers are deterred from purchasing novelties in any number under the old price. The demand for new fancy Pansies in the south has largely increased during the past five years. No doubt the London Pansy Society with its large membership will also increase this demand. I am inclined to think the certificates issued by the Pansy societies do not carry the same weight as those issued by similar organisations—take, for instance, the National Chrysanthemum Society. If they did I feel sure it would materially stem the tide of new varieties. Some firms are offering eighty new varieties for the first time. It is almost an impossibility to pick out the best forms from such a list. After the exceptional weather of last season, when Pansy seed was produced so freely, I am afraid next year we shall see a greater influx of new sorts. I shall welcome any scheme brought forward to check, or rather select in a rigorous manner, the productions of our Pansy raisers.—J. B. R.

— MESSRS. DOBBIE & CO. desire us to state that they are giving fifty silver medals to be awarded to the most successful amateur exhibitors at various Shows throughout the country.

— WE learn that Dr. W. Migula has been appointed Professor of Botany at Karlsruhe Technical High School, and Dr. W. Laposchnikoff Professor of Botany in Tomsk University, Siberia.

— APPOINTMENT IN MAURITIUS.—We learn that Mr. William Scott, formerly of the Royal Gardens, Kew, and lately Assistant Director of Forests and Botanical Gardens in Mauritius, has been appointed Director in place of Mr. J. Horne, resigned.

— THE January number of the "Botanical Magazine" which has come to hand contains plates and descriptive matter relating to the following plants:—*Sobralia xantholeuca*, *Kalanchoe marmorata*, *Erythroxylon Coca*, *Prunus humilis*, and *Æschynanthus obconica*.

— GARDENING APPOINTMENT.—Mr. W. Carr, late gardener to H. C. Jobson, Esq., Summer Hill, Kidderminster, has been appointed head gardener to H. E. Martin, Esq., Ham Court, Upton-on-Severn, in succession to Mr. Batten, who, after seventeen years' service, has gone into business near Bristol.

— FLOWER SHOWS AT MANCHESTER.—The following are the dates of the Exhibitions of the Manchester Botanical and Horticultural Society for the current year:—First Spring Show at the Town Hall, 13th and 14th March; second Spring Show at the Town Hall, 24th April; Grand National Horticultural Exhibition opens at the Gardens, Old Trafford, 11th May; Rose Show at the Gardens, 21st July; Chrysanthemum Show at the Town Hall, 20th and 21st November.

— RASPBERRY JOTTINGS.—Mr. W. J. Godfrey observes:—"If 'J. R. B.' (page 33) requires size, I would recommend him to grow Superlative. When this variety becomes better known I believe it will be the favourite. Hornet, with us, is too pale in colour, and apt to crumble or fall to pieces. Undoubtedly the latter is a good cropper, and large in size, and where the fruit is 'tubbed' for the jam manufacturer it may be a serviceable kind, but not equal to Superlative."

— TOMTITS IN THE GARDEN AND ORCHARD.—In reply to Mr. J. Hiam (page 54), I beg to inform him it has been his "cavilling" and doubting others' statements that led me to write the note on page 28. In view of shortening the discussion I refer him to my previous statements in the *Journal of Horticulture*. He will find there stated my opinions why *Parus minor* took buds in one garden and not in others, as well as the name of the birds. I am perfectly well acquainted with the destructiveness or usefulness of all the birds named, but have not the heart to trap and imprison wild birds in a cage.—A. L. B. K.

— SOCIETY OF JERSEY GARDENERS.—The fourth annual dinner of the above Society was held on the 18th inst.; Mr. Peter Bois (President) occupied the chair, Mr. A. Luxon the vice-chair. About sixty were present, and the table was very beautifully decorated with choice flowers and plants, lent by Mr. J. H. Devenport. The arrangements were carried out in excellent style by the Stewards, Messrs. E. Salway and H. G. Skingsley, and the Secretary, Mr. A. Smith.

— TREE PLANTING.—Surely there must be a mistake in the otherwise excellent advice which Mr. Luckhurst gives on page 43 anent this subject. After describing how the trees were planted early in November, he goes on to say, "By the end of the year the pruned roots would be bristling with a new growth of rootlets—feeders for the trees in the following spring." Surely he does not mean that these newly planted trees would make a new growth of rootlets during the months of November and December after being replanted at the time stated. I was not aware that new roots were made at such express speed after the check of removal.—E. MOLYNEUX.

— TEA CULTIVATION ON THE SLOPES OF THE CAUCASUS.—An interesting experiment is about to be made in Russia with regard to the cultivation of the Tea plant. His Imperial Majesty the Czar, acting upon the advice of experts, has consented to the proposed cultivation of the shrub on the western slopes of the Caucasus, which are warm and approximate closely to the temperature in which the plant flourishes in China. Some time ago 600 thriving shrubs were in Port Said awaiting suitable transport to some port in the Black Sea, from whence they were conveyed to some convenient building where they will be able to withstand the rigorous winter. A staff of about a dozen Chinese is engaged—men thoroughly conversant with the peculiarities of the plant—under the direction of a Russian officer who has been deputed to carry out the initial steps of the experiment.

— WE have received a copy of No. 3 ("Timbers") of the OFFICIAL GUIDE TO THE MUSEUMS OF ECONOMIC BOTANY in the Royal Gardens, Kew. Being the second edition it has been revised and augmented, and contains much useful information relative to the uses of the various timbers.

— A SILVER MEDAL FOR A GARDEN PLAN.—It is reported that the Scottish Horticultural Society's silver medal, offered as first prize for the best plan of a villa garden, has been won by Mr. J. C. Newsham, sub-foreman in the Fernery Department at the Royal Gardens, Kew.

— EARLY FLOWERS.—A western country correspondent says:—"Despite the visitation of recent severe frost there are Primroses in flower in suburban gardens round Bristol, and in the present remarkably mild and genial weather there is little to indicate that the weather was extremely cold only a few days ago."

— PRIMULAS FROM MAIDENHEAD.—Mr. R. Owen, The Floral Nursery, Castle Hill, Maidenhead, sends us some blooms of his Imperial strain of Primulas. The strain is obviously a good one, the flowers being particularly bright and varied in colour, also, possessing size and substance. This applies to the double as well as single varieties.

— DEATH OF MR. WILLIAM TRUELOVE.—We regret to hear of the death of Mr. W. Truelove, at the age of seventy, who was foreman in the arboretum at Kew for twenty-six years, which took place at Brixton on the 16th inst., after a short illness. Mr. Truelove was trained, we understand, in the famous arboretum at Bickton, and in Mr. Barron's nursery at Borrowash. He had a wide knowledge of cultivated trees and shrubs, and retired from Kew two years ago on a pension.

— RAINFALL IN 1893.—Mr. C. A. Pearce, Oteley, Ellesmere, says:—"It seems somewhat incredible that something like 2200 tons of rain per acre fell in 1893." His returns are 21.91 inches, so the weight is nearer 3000 tons than stated, and below the average. Mr. W. Mabbott, Gwernllwyn, Dowlais, Glamorganshire, registered 50.26 inches in 1893, the greatest amount for the past seven years, except 1891, when the amount was 63.30 inches.

— THE WEATHER.—How exceptional the weather of the past week had been was shown by official records which were issued on Tuesday last. Throughout the whole of England thermometric readings were taken which should rule rather in early April or late March than in the first month of the year. London, Brighton, Portsmouth, Bristol, Preston and Bradford head the list, each with a mean temperature of more than 45°, the daily value in the metropolis, as remarked in another paragraph, being between 6° and 7° higher than the average of the past fifty years. Even on the East coast, taking Hull as the centre, the thermometer stood at 42.9°. Such a spell of warmth has not been experienced since the latter weeks of October.

— REMARKS ON THE WEATHER OF LAST YEAR.—Mr. W. H. Divers, Ketton Hall Gardens, Stamford, writes:—"The year 1893 will long be remembered as exceptionally dry and hot. This district suffered severely, owing to the shallow limestone soil. Scarcely any hay was made, but autumn fruits were abundant and extra fine. Barometer was highest (30.73 inches) at 9 A.M., December 30th; lowest (28.62 inches) at 3 P.M., December 20th. Highest shade temperature 93°, on August 18th; lowest 5°, January 5th. Mean daily maximum, 59.15°; mean daily minimum, 41.07°. Mean temperature of the year, 49.99°. Lowest on grass, 3°, on January 5th; mean of lowest readings on grass, 34.21°. There were 168 days on which rain fell; the total fall was 16.96 inches, which is 10.34 inches below the average for the year. The greatest daily fall was 0.69 inch, October 7th."

— LILACS FOR FORCING.—In forcing Lilacs it is best to have two instalments of plants for alternate seasons. When this method is followed the plants should be repotted after flowering, and plunged outside until the autumn. The soil should be pressed firmly into the pots. In potting remove any suckers. Plunge the pots over their rims in an open sunny position. When this is done no trouble will be given in watering the plants throughout the summer. Before plunging the old growths on which the flowers were produced may be cut close back. The plants will then make strong clean growths, and set buds and flower freely. Standard Lilacs with clean stems 18 inches to 3 feet would be highly appreciated for grouping if they could be produced at a reasonable cost, and I do not see why they should not; perhaps they are, but I have never had the pleasure of seeing any home-grown Lilacs for forcing that I regard as satisfactory.—R. M. B.

— CONGRESS OF HORTICULTURAL SOCIETIES.—We are informed that it is proposed to hold, under the auspices of the Royal Horticultural Society of Aberdeen, a Congress in Aberdeen of Horticultural Societies in March or April, 1894, at which representatives from the leading societies in Great Britain have been invited to attend, for the discussion of matters relating to the advancement of horticulture and kindred subjects.

— SWEET PEAS TRAVELLING.—Sweet Peas ("Subscriber," page 28) travel perfectly well. The way I do with these, and indeed many flowers, is to tie them in bunches and place the stems in water for a few hours previous to packing and sending them on their journey. Our flowers are without exception despatched in the afternoon, and being gathered in the morning they have time to get well prepared. In bunching place the flowers so as to face one way, and six dozen or fewer will be a sufficient number to bunch together. The only packing material I use is paper. The best Sweet Peas for growing for the market appear to be Princess Beatrice and Mrs. Gladstone. Her Majesty also brings a good price; moreover the bunches take a less number, as the flowers are so large. Mrs. Sankey is the best white in the market.—B.

— CARDIFF HORTICULTURAL SOCIETY.—The fifth annual meeting of this Society was held on Monday last, when there was a good attendance, Mr. J. D. Morgan being in the chair. The balance-sheet for last year showed a deficit of about £30. It was resolved to hold the next Show about the middle of August. The officers for the year are as follows:—President, the Mayor; Chairman of Committee, Mr. W. C. Peace; Vice-Chairman, Mr. Crouch; Secretary, Mr. H. Gillett. An old and valued Committeeman, Mr. A. Pettigrew, of the Castle Gardens, resigned in consequence of "an ungrateful public," who do not patronise the Society's efforts as they deserve. It is to be regretted his services as a Committeeman are lost to the Society, but he promised to do all in his power to further their interest. Some new features will be introduced at the next Show in the shape of additional attractions. Mr. H. Gillett, 66, Woodville Road, Cardiff, is the Secretary.

— FRUIT PRODUCTS IN THE UNITED STATES.—An American paper says:—"Within a few years the foreign markets have taken from this country (America) in one season between 1 and 2 million barrels of Apples and 3000 tons of evaporated fruit. The horticultural productions of the Mississippi Valley, consisting mainly of fruit, have been estimated at an annual value of 100,000 dollars, while more limited regions gave corresponding returns. The Illinois Central Railway carried over 4000 tons of Apples into the City of Chicago, besides 2000 tons of Strawberries, the product of a single season. The Michigan Central conveyed 15,000 packages of Peaches in a day. The City of Boston received from Norfolk, Va., during one year, 16,000 bushels of Strawberries, and from plantations nearer home 10,000 bushels more. A single county in Western New York (Orleans), furnished the market 269,000 dollars' worth of fruit, besides the amount consumed at home, in one year, and other counties have occasionally exceeded this sum. Two hundred thousand bushels of Peaches were canned at San Francisco in one year, and the dried fruits of that State sold for over 2 million dollars, of which the Raisin crop amounted to half a million."

— FEEDING VALUE OF TREE LEAVES.—Experiments on the feeding value of the leaves of trees, made by M. C. H. Girard, point to them as an available source of nutriment for cattle, particularly at times when hay and grain are scarce. The author has determined the content of nitrogenous matters in a considerable number of species. It ranges from 8 per cent. in the Willow and Alder to from 3 to 4 per cent. in the Plane, Birch, and Pine. Out of twenty kinds of leaves studied, nineteen possessed more nitrogenous matter than meadow hay, and more than half of them were superior to the hay of the best leguminous plants. Some are of extraordinary richness—the common Acacia for example. M. Girard was able, says the "International Journal of Microscopy and Natural Science," from his analyses and from direct experience in feeding sheep, to draw the conclusion that the leaves have a feeding value comparable to that of Lucern. They are also superior in the proportion of fat matters and other carbohydrate principles to that of water. Leaves taken from various heights of the trees and from trees of various ages show but little variation in composition; and, putting aside the periods of youth and of extreme old age, the richness of the leaf in nutritive value remains almost stationary. Consequently, crops can be gathered during the three summer months, and in September the wood production of the trees would not be prejudiced.

— A NEW IMPATIENS which is likely to prove a valuable acquisition to our warm greenhouses has just been introduced into cultivation from the Comorres Islands by mere chance. It has been named by the French botanists (who first described it from dried specimens) *Impatiens duricoma*, a golden yellow-flowered, free blooming Balsam. A few seeds of it germinated on the stem of a Tree Fern sent to a Paris nurseryman which reached him dead, but was fortunately not at once thrown away. This new *Impatiens* will soon be distributed by Monsieur Godefroy-Lebeuf of Argenteuil near Paris, and a coloured plate of it will, at my request, be given of it in course of this year in the "Revue Horticole" of Paris, as I first brought it under the notice of the editor, who is a personal friend of mine.—W. E. GUMBLETON.

— THE GIPSY MOTH.—For several years the State of Massachusetts has been attempting to exterminate the gipsy moth, and a Bill has recently been introduced into the House of Representatives to appropriate 100,000 dollars to rid the State of that troublesome insect. The "American Naturalist" points out, however, that the desired end can never be attained by merely hunting the moths in trees, hedgerows, and garden patches. In its future work the Gipsy Moth Commission of Massachusetts should employ at its head a trained entomologist, who should devote his time to finding and introducing some natural enemy to the pest. Moths, eggs, larvæ, and cocoons will escape the most careful of field agents, whereas insect parasites will keep the pest in continual check.

— CULTURE OF RAMONDIA PYRENAICA.—The inquiry on page 19 regarding the slow growth of this plant is not surprising. For years I had a difficulty in getting the purple variety of *R. pyrenaica* to flourish at all well, in spite of repeated planting in various parts of the rockery. Peat is the chief constituent that its roots revel in. With me the ordinary chalky soil was unsuited to its growth, and the plants remained almost stationary for several years. At last I chose a position on the north side of the rockery, and just under the ledge of an overhanging rock. Plenty of drainage was afforded, and the compost was half peat and turfy loam with lumps of sandstone and silver sand added. During the summer abundant supplies of water is provided. The semi-shaded position seems to suit the plant well. The last two seasons we have had many charming blossoms, which last a very long time in perfection. As yet I have seen no signs of seedlings appearing in the soil near the plants. In the sandy peaty soil in the neighbourhood of Christchurch this *Ramondia* flourishes amazingly.—E. M.

— BIRMINGHAM AND DISTRICT AMATEUR GARDENERS' ASSOCIATION.—The first annual meeting of the Birmingham and District Amateur Gardeners' Association was held at their rooms, 116, Colmore Row, on Wednesday last, Alderman Wm. White, J.P. (President) in the chair. There was a good attendance of members and friends. The Chairman in proposing the adoption of the report and balance sheet, congratulated the members on the progress the Association had made since its inauguration, and expressed the opinion that there was no occupation more favourable to physical culture than the pursuit of gardening; for his part he would like to see a garden by the side of every railway station. Councillor Martineau in seconding, observed that there were already 152 members, which showed that such an Association was wanted in Birmingham. The report having been adopted, a vote of thanks was passed to the President for his services during the past year, and in reply he expressed his wish to give a lecture on "Travels among the Swiss Alps" (illustrated by limelight views) at a suitable date in February. The following officers for the year 1894 were elected:—President, Alderman Wm. White; Vice-Presidents, The Rt. Hon. Jesse Collings, M.P., Councillors R. F. Martineau, Hy. Bissek, John St. S. Wilders, J.P., Wm. Bown, Esq., Leonard Brierley, Esq., J.P., R. Cadbury, Esq., J.P., J. C. Holder, Esq., J.P.C.C., A. B. Holinsworth, Esq., and E. M. Sharp, Esq. Mr. R. F. Rees was re-elected Hon. Treasurer, and Mr. W. R. Griffin Hon. Secretary. Committee, Messrs. Geo. Prenly, W. H. Wilks, Arthur Roe, Charles Shatton, Ernest D. Clark, Arthur Groves, W. H. Twist, C. F. Franklin, W. Wood, T. Gosling, T. P. Cope, and J. Downing. Councillor Martineau, in the absence of the President (who was compelled to leave early), then distributed the medals and certificates to the successful exhibitors during the past year. They were as follows:—Messrs. T. Gosling (silver medal), W. B. Griffin (bronze medal), E. D. Clark, R. F. Rees, W. H. Wilks, Herbert Smith, C. F. Franklin, and Miss Martineau (certificates). Mr. F. T. Poulson (Stafford) was awarded a special certificate for a splendid collection of alpine and show Auriculas exhibited in April last. Fourteen new members were elected.—WM. B. GRIFFIN, Hon. Secretary, 321, Moseley Road.

— CAULIFLOWERS.—I have no doubt many readers will be able to endorse the remarks of "D." (page 50) on this subject. We had, doubtless, many complaints to make against the past season, but in this particular respect it has favoured most of us. The wonderful heads of Autumn Giant seen quite recently in the London markets would almost make us forget many of our troubles in respect to the weather. I saw a fine bed utterly destroyed by the severe frost the first week in the present month near Dover. A little trouble taken in lifting and hanging them in a shed would have saved many. A cottager told me he had had a dish of Autumn Giant for his dinner on January 13th by lifting them and laying them in by the heels in a frame, which he covered during the severe frost.—R.

— SNOWDROPS.—"B. C.," The Willows, Windsor, writes:—"I never remember seeing the Snowdrop, *Galanthus nivalis*, in flower so early here. It is quite three weeks earlier than usual. Had it not been for the severe frost we had at the new year the flowers would have been out a week or ten days earlier than they are now. Since the frost they have come on rapidly, and now (20th inst.) all under the trees on the lawn is a mass of pure white. I am of opinion that the Snowdrop is not planted so extensively as it ought to be under spreading trees on lawns, where grass grows sparsely, and sometimes not at all. In such a position the Snowdrop is quite at home, and has a beautiful effect. Many acres of the grounds at Dunrobin Castle have been planted by Mr. Melville, who has made the cultivation of the Snowdrop a speciality, and with excellent results. When I had the pleasure of seeing them in flower some years ago they were all that could be desired. The flowers were very large, and the effect of acres of the beautiful white carpet under the sombre trees as seen from a distance was very fine."

— PLANTS AT NOTTINGHAM NATURAL HISTORY MUSEUM.—Professor Carr informs "Nature" that a very extensive and valuable collection of British and foreign plants has been presented to the Nottingham Natural History Museum by Mr. H. Fisher, late of Newark. Some idea of the nature and extent of the collection may be gathered from the following enumeration of the more important series included in it. 1, A practically complete herbarium of British plants, comprising about 2000 species and varieties, and about 10,000 specimens. 2, A European collection, comprising many thousand species from France, Germany, Switzerland, Austria, Roumania, Russia, Norway, and Sweden. 3, Several thousand species from North America. 4, A very fine collection from the Bombay Presidency. 5, About 1500 species from Natal, the Transvaal, and other plants of South Africa. 6, A small collection from Australia. Of the above collection that from Russia is of quite exceptional value and interest. It comprises species from all parts of the Russian Empire—from St. Petersburg, Lapland, and the Crimea, through Siberia to Kamskatka and Turkestan, also from the Trans-Caucasus and the Caspian region. The Spanish collection is an extremely fine and valuable one—probably one of the best in existence. In order to hand over the collection to the town in as complete and accessible a form as possible, Mr. Fisher is himself arranging and labelling the collection.

— BOURNEMOUTH GARDENERS' ASSOCIATION.—This Society has now entered on the sixth year of its existence. The first meeting of the session being held on Monday 15th inst., a lecture on "Soils and Manures" was given by Professor F. M. H. Munro of Downton College. Unfortunately a very wet night limited the attendance. The lecturer gave a most interesting and instructive discourse, making special reference to Bournemouth soil, a sample of which had been sent to him for analysis. The sample was taken from the Common, or what is now termed the Meyrick Park, now being laid out by the Corporation, and which had not been under cultivation in the memory of anyone. At the close of the lecture, Professor Munro received a hearty vote of thanks, and the same was accorded to the Chairman, T. J. Hankinson Esq., J.P. This lecture was arranged by the Director of Technical Instruction of the Hants County Council. A glance at the soil constituents suggests that if profitable crops can be wrested out of such soil, the Bournemouth gardeners must be most excellent cultivators. The medium is almost entirely composed of gravel and sand with mere traces of clay and vegetable matter, while the chemical analysis reveals scarcely anything that is good. We are glad to see by the financial statement that the Society is prosperous, and judging from the following programme for the present year intends to be useful: January 29th, "Artificial Manures—Their Use and Application," Professor F. M. H. Munro; February 6th, "Tomatoes for Profit," Mr. S. Castle, Ashford Vineries, Fordingbridge; February 20th, "Some Interesting Facts

Concerning Plant Life"—Illustrated, Mr. W. Jones; March 6th, "The Improvement of the Position of Gardeners," Mr. H. Elliott, Stourfield Nursery, Christchurch; March 20th, "Can a Garden be Made Effective with Hardy Plants and Annuals," Mr. J. Crook, Forde Abbey, Chard; April 3rd, "The Cultivation of Asparagus," Mr. Skinner, The Gardens, Highcliffe Castle; April 17th, "The Cultivation of Amaryllis," Mr. J. Spong; May 1st, "History of the Cross-Fertilization of Plants," Miss Roper; May 15th, "A Few Hints on Orchid Growing," Mr. W. H. Jones; June 12th, "Some Varieties of Aphids," Mr. J. Kettle.

— AN EAST END HORTICULTURAL SOCIETY.—The new Horticultural Society at the People's Palace, Mile End Road, London, over which the Duke of Fife is to preside, will probably have, a daily paper says, a large membership. It will be essentially an amateur's Society, the subscription for exhibiting members being only 1s. per annum. For this modest sum it is proposed to grant the privileges of entry for the special prizes offered to working-men horticulturists, of free admission to the two or three shows held in the course of the year, with other privileges. In case the gate money taken at the shows and the members' subscriptions should not suffice to make the concern financially sound, a large number of gentlemen and ladies interested in East London will be asked to become associates and vice-presidents.

— WOOLTON GARDENERS' MUTUAL IMPROVEMENT SOCIETY.—The fifth annual meeting of members of the above Society was held in the Mechanics' Institute, and was largely attended; Mr. D. H. Johns presiding. Besides acknowledging valuable papers read by local gardeners, the series of lectures delivered by R. J. Harvey Gibson, Esq., M.A., F.L.S., on "The History of Botany and Agriculture," were highly appreciated. The floral concert gave unqualified pleasure, the result being that the sum of £10 10s. was sent to the Gardeners' Royal Benevolent Institution. The library is much frequented, and shows a great increase on the number of books circulated. Those added during the current year were "The Orchidaceous Manual" (two vols.), kindly presented by Messrs. James Veitch & Sons, and by purchase, "The Fruit Growers' Guide," by John Wright, and Williams' "Stove and Greenhouse Plants." The account shows a substantial balance. The Secretary, Treasurer, and Librarian were unanimously re-elected, and half of the Committee retiring the following were elected for two years:—Messrs. J. Stoney, G. Cliffe, W. Ellis, G. Mainwaring, W. Barber, J. Blakey, F. Clarke, T. Sumner, and T. Leadbetter.—R. P. R.

HÆMANTHUS LINDENI.

THIS is one of the most beautiful species of the *Hæmanthus* in cultivation. It was discovered by M. Auguste Linden, after whom it has been named, in the Congo region, and was introduced a few years ago. In October last MM. Linden, Brussels, staged a fine plant of it, amongst other novelties, at the Drill Hall, James Street, S.W., and for which the Floral Committee of the Royal Horticultural Society awarded a first-class certificate. The plant in question bore three large scapes of bloom, one of these being represented in the illustration (fig. 11). The flowers are soft rosy red, each one being distinct, and are produced in large heads.

FRUITS AT DUFFUS HOUSE.

MR. ARCHIBALD H. DUNBAR sends us lists of fruits grown in the gardens at Duffus House, near Elgin, and grown well too, as we know by the specimens we have received. The lists have been reprinted from the "Moray and Nairn Express," with the following prefatory remarks:—

"Moray has long been called the 'Garden of Scotland,' though by what authority we are not in a position to state. There are one or two other places which contest the claim; but there is this to be said, that if there were any possibility of putting it to the test, the climate of Moray will be hard to beat in this far north Scotland of ours. Probably one of the best tests that could be applied is in the production of fruits grown in the open air. In this connection we have pleasure in drawing the special attention of readers to a complete list of the various kinds of fruit which many years' experience has proved can be grown with success in the gardens at Duffus House.

"There are many good gardens in the province of Moray, but probably none surpass those at Duffus House, the residence of Sir Archibald Dunbar. These lists of fruits grown there have been carefully drawn up by Sir Archibald's eldest son. The value of the knowledge they impart is easily understood if we reflect that as it takes some years for a fruit tree to come into bearing, much time is lost in ascertaining the comparative merits of the different sorts. A study of these lists will thus save fruit growers years of disappointment, and we should advise the preservation of them for future reference.

"The variety of Apples and Pears grown at Duffus House is very remarkable. We are accustomed to look to foreign countries for much of our fruit supply, and for the importation of Apples alone from America and Tasmania enormous sums of British money are annually paid. But if the cultivation of fruit were more generally attended to, and the fact better understood that it was possible to grow in this country the fine varieties enumerated in these lists, then fruit would

the best of vegetable food. In Germany and America, for instance, rich and poor alike are well aware of this. Their value is not yet fully realised in this country, and especially among the working classes. But if a wider knowledge existed of the fruit-producing capabilities of our soil, under proper modes of cultivation, there can be no doubt that the value of Apples as a cheap and wholesome article of food would be more generally recognised."



FIG. 11.—HÆMANTHUS LINDENI.

become much more common as an article of diet, and we should pay less money to the foreigner. It has been said

'A cooked Apple a day
Keeps the doctor away,'

and there can be no doubt that Apples, either baked or cooked, are

Besides general lists, selections of the different kinds are given, such as Apples, Pears, Plums, Apricots, Peaches, Nectarines, Cherries, and Strawberries. The pamphlet, published at the *Express* Office, 175, High Street, Elgin, contains a good and cherished collection of fruits.



QUEEN'S PRIZE, WINDSOR SHOW.

It is to be hoped that the decision of the Committee as to the allocation of this prize will be very carefully considered, as in order to give the members of the N.R.S. a fair chance all round a small class should be decided on. But if the executive decide on a small class and then make certain restrictions in regard to the method of exhibiting (such as an arrangement of alternating Tea and H.P. Roses, which I hear is possible) it will hamper small growers. The large grower has at all times odds in his favour, and therefore the smaller growers who are in the numerical majority of about twenty to one in our Society should be given every reasonable chance of winning this coveted prize.—CHAS. J. GRAHAME.

REIGATE ROSE ASSOCIATION.

We are informed that nearly £200 will be offered in prizes at the forthcoming Show. Mr. R. E. West offers a challenge prize in silver, value £5, for a table decoration for eight persons, to be won twice by the same member, the second to receive £1 ls. from Hon. H. Cubitt. Mr. Frank Cant offers a piece of plate, value £5 5s. for twenty-four distinct single trusses, to be won twice by the same member. We have received expressions of regret that the Show has been fixed for the same day as the Croydon Show. We do not know whether this is so or not; but if it is, and the clashing was avoidable, it seems a pity to run the risk of impairing both exhibitions; but local authorities ought to know what is best for their districts.

ROSE MRS. W. J. GRANT.

MESSRS. A. DICKSON & SONS of Newtownards, advertise this Rose in the "Rosarians' Year Book" under the name of "Belle Siebrecht, H.T." They add that they disposed of their stock of this variety to Messrs. Siebrecht & Wadley of New York, who have considered it their privilege to change the name. Without going into the invidious question of which of the two names is best suited to British mouths and British pencils, permit me to say that, as a member of the N.R.S., which bestowed its gold medal upon the Rose Mrs. W. J. Grant before it was purchased by the American firm, I "consider it my privilege" to adhere to the original name, and I hope all rosarians in the British Isles will do the same.

CANKER ON THE WILD BRIAR.

When canker attacks a standard Maréchal Niel, the matter is often spoken of as if it was a malady belonging especially to that or other cultivated varieties. But, while getting standard stocks lately from the hedges, I have come across several cases of canker, not only in old, but in two year and even one year old stems. The appearance is exactly like the first symptoms of canker in an Apple shoot, and it does not seem in any case to have been caused by an external wound, nor from frost-bite, as the occurrences were in thoroughly sheltered positions. In the case of a strong shoot of the year, the attack had evidently taken place in the late summer, as fresh growth had occurred immediately below the affected spot. Is it possible that the exceptional season of 1893 has induced this by a similar series of causes to those which have made Apples keep so badly?—W. R. RAILLEM.

HYBRID TEA CLASSIFICATION.

I THINK "J. B.'s" criticism in the Journal (page 47) is founded on an erroneous reading of what has been written on this new class; but possibly he has only in reading the recent correspondence become aware of, and as yet has not grasped the point that there had been cases of disqualification in 1893 by the showing of Hybrid Teas in H.P. classes. Such disqualifications took place at Earl's Court. One case I remember well, of a beautiful box of Roses disqualified in July, as I was acting as a judge on the occasion.

Mr. Pemberton is to be thanked for having called early attention to these Earl's Court schedules in 1893, otherwise many rosarians might have taken up boxes of Grace Darling, Viscountess Folkestone, La France, and Caroline Testout, and found their trouble and labour to be so much wasted energy. From Mr. Pemberton's warning I made inquiry, and was forearmed, and so saved such annoyance. So much for disqualification.

I have not read, in a minor tone or otherwise, that the Hybrid Teas have been deposed from a position of honour; but I certainly feel, with others, that to take Roses out of classes where they have been well known for periods ranging up to a quarter of a century, in order to humour what can only be considered a new-fangled idea in classification, is, to say the least of it, somewhat more closely approaching the ridiculous than the sublime, and certainly merits no encomium on its originator.

By what I can only call a narrow squeak at the recent N.R.S. annual meeting, the Hybrid Teas escaped further disaster and effacement, as it was only by repeated correction, objection, and explanation on that occasion that many in the room understood the absurd pass to which the new Hybrid Tea classification had brought matters. However,

Mr. Frank Cant may be said to have saved the situation, and now Hybrid Teas can be shown at our meetings when they might not otherwise have been eligible, although "J. B." seems to think they "were ever" so placed. Yes! they were until last year's Rose Catalogue Committee brought in the present classification, and made the discussion a necessity. From a botanical point of view "J. B." may certainly be right in being desirous of minute classification in Rose culture, but after all how many really want it? Those to whom it might be useful are, I think, a small minority. What is really wanted in our Society's publication is simplicity, and also clearness; and these advantages are not to be obtained by piling class upon class, and dividing these again into smaller sub-classes, making matters to a novice "confusion worse confounded." "J. B." thinks the fact of there not having been a single box of Hybrid Teas shown in 1893 as one of no moment, because it was the first year of introduction; but it was not the first year in which most of us had known many of these H.T. flowers, which certainly would have been shown by the large growers if they regarded the class with enthusiasm. But they do not so regard it, and the reason of the empty class is that few like or really care for it, and we must have some more convincing arguments in its favour than those given on page 47 if it is to be retained. Otherwise "W. R. Raillem's" condemnation, supported by such a rosarian as Mr. Lindsell and a man of such great experience as "D., Deal," will bear fruit before the year 1894 passes away.—CHARLES J. GRAHAME.

I ADMIT that "D. Deal," (page 47) was right and I was wrong when I opposed his having the first Hybrid Tea turned out of the Tea classes. I even agree now that a red Tea is not an improvement to any box of Teas. But I also agree with "J. B." (p. 47) that no one is injured by Hybrid Teas having a class of their own, and that this is likely to promote their further development. Almost all large classes are for the "any kind," so that there is little fear of La France and her children not appearing.—A. C.

It is satisfactory, as Mr. Grahame (page 46) says, to find such authorities as Mr. Lindsell and "D., Deal," siding with those who do not approve of the new arrangement of Hybrid Teas in the N.R.S. catalogue. It seems to me that "J. B." does not quite catch the point. This is not, as I look upon it, that certain so-called H.T.'s will suffer much in qualification for exhibition, but rather as to whether La France and Captain Christy are H.T.'s, and if so why others are not classified as such with them.

There is also a principle in question, whether classification now and in future shall consist of separation into many small classes or amalgamation into a few broad ones. Upon this I am quite of the opinion of "D., Deal," (whom few will accuse of being "revolutionary" in his suggestions) and Mr. Grahame, that what we want now, and shall want even more in future, is confederation into a few wide well-known classes rather than further partitioning off into minute sub-divisions. Mr. Wm. Paul, in his large work "The Rose Garden," divides cultivated Roses into forty-one groups, and in his paper read at the R.H.S. Conference in 1889, into forty-four groups arranged under sixteen sections. All this is most useful and interesting, and should by no means be lost sight of, in view of further hybridisation, and as a court of appeal in working out the origins of new varieties. But it is, and must be, "caviare to the general;" if a man must be "up" in all these groups and sections before he can become a rosarian, he will have to "read first," and perhaps to pass a stiff examination. For ordinary, and also for exhibition purposes, we must, I am sure, have a simpler and wider classification, ranking Bourbon Perpetuals and Hybrid Teas under Hybrid Perpetuals, and Teas and Noisettes under Teas.—W. R. RAILLEM.

SATISFIED, as no doubt many of us have been, with the onslaught of "W. R. Raillem" and C. J. Grahame on this class, I am delighted to see the old hand, "D., Deal" (page 47), dealing blows still more weighty on the matter. If at general shows Hybrid Teas are to be excluded from the Hybrid Perpetual stands, what a fruitful source of trouble and worry is opened to those who undertake the not very enviable duty of judging. My own feeling is that in the whole subject of judging there is nothing more annoying to a junior, and possibly amateur judge, than that of disqualifying an exhibit.

It is very easy to say that every exhibitor should make himself familiar with the rules and regulations. No doubt all this is right in theory, but this, alas! does not always agree with practice. The National Rose Society's regulation as to Hybrid Teas and Teas was not a new thing when I, a mere pigmy comparatively in Rose knowledge, was obliged conscientiously to disqualify two such giants as Mr. Prince and Mr. Cooling for placing in their twenty-four Teas Grace Darling. A most unpleasant duty it was, the more so as the stand of the former exhibitor was exceptionally grand. How long will it be before the general body of lesser exhibitors realise the fact that if N.R.S.'s rules are to be carried out, and I hold they should be law on all matters affecting the exhibition of the Rose, how many annoyances of this kind must occur, because in almost every season La France has been, unlike Cheshunt Hybrid, a favourite, and deservedly so, exhibition flower.

It would seem from "J. B.'s" note that follows "D., Deal's," that there is a misunderstanding somewhere, the former stating that "Hybrid Teas may now be shown in all classes, in which they were ever eligible," whilst the latter, to us outsiders the great authority, says, "And now see what the action of N.R.S. has done for it. It (La France) and its three sports—Augustine Guinoisseau, Duchess of Albany, and Denmark

—cannot be shown in any class of Hybrid Perpetuals." What reconciling can there be between these two opinions? Surely it is a mistake to alter the position of a Rose after a quarter of a century's life.

I note that "D., Deal," says there are only eleven Hybrid Teas; he seems to count Captain Christy and its climbing variety as two, but for exhibition purposes they can only be one, thus reducing the number further, at least as I understand the N.R.S.'s regulations.—Y. B. A. Z.

PERHAPS it is not often that the contention of a correspondent is absolutely established in the same issue of the Journal in which it appears. But on page 47 I wrote that the previous letters had implied that some hardship had been inflicted upon Hybrid Teas by the action of the N.R.S., and "D., Deal," on the same page, puts the suggested hardship into words, and at the same time shows how entirely erroneous it is, when he says that these flowers "cannot be shown in any class of Hybrid Perpetuals . . . these Roses are excluded." The multiplicity of matters which claim the attention of your esteemed correspondent must have caused him to forget what occurred at the annual meeting of the N.R.S. A resolution was brought forward which ran—"Hybrid Teas must not be exhibited among Teas and Noisettes." The fair inference from this would naturally be that they may be shown in other classes; but to establish the matter upon a firmer basis than inference Mr. Frank Cant wisely moved to add the words—"but they may be shown with H.P.'s and in mixed classes," and in this form the regulation was adopted. So what "D., Deal" ought to have written was—"they can be shown in any class of Hybrid Perpetuals."

Again, I think, "D., Deal," is scarcely correct in writing that there are only eleven varieties of H.T.'s mentioned in the catalogue. I write with reserve upon this point, because at the moment I cannot put my hand upon the book in question, but I believe it will be found that there are two lists of Hybrid Teas contained therein, and that while the first list contains only eleven names, the second one embraces many more, some of them very beautiful flowers, well worthy of separate classification and exhibition.

All who know your correspondent must recognise the truthfulness of his last sentence on page 47, and I am therefore sure that he will be glad to have his memory refreshed, and to be set right upon the points mentioned above.—J. B.

GARDENERS' ROYAL BENEVOLENT INSTITUTION.

As briefly mentioned in our last issue the annual friendly supper of the members and friends of the Gardeners' Royal Benevolent Institution was held at Simpson's, Strand, W.C., on Wednesday, the 17th inst. N. N. Sherwood, Esq., occupied the chair, and he was supported by a large company, nearly a hundred gentlemen sitting down to the tables. Amongst those present we noticed Phillip Crowley, Esq., H. J. Veitch, Esq., T. F. Peacock, Esq. (honorary solicitor to the Institution), R. M. Hogg, Esq., Messrs. A. Moss, J. Weeks, H. Turner, H. Cutbush, G. Bunyard, J. Laing, J. H. Veitch, W. J. Nutting, J. Webber, G. Monro, P. Barr, W. G. Head, A. F. Barron, J. Hudson, G. Wythes, with many other horticulturists and supporters of this deserving charitable organisation. The arrangements were carried out by Mr. G. J. Ingram, the Secretary, in his customary able manner, and the proceedings being of a purely social character enabled those present to spend a pleasant evening.

The Chairman, after the usual patriotic toasts had been disposed of, rendered that of "Continued Success and Prosperity to the Gardeners' Royal Benevolent Institution." He said they had good reason for congratulating themselves in being fairly successful during the past year, especially when considering the general depression that existed throughout the country. This was a gratifying fact of which they all might be proud. The balance sheet which they had passed that day showed the position they were in at present. It proved that nearly £2700 had during the past year been expended in pensions and gratuities. (Hear, hear.) He would briefly call attention to a few facts to show how they had progressed. The Gardeners' Royal Benevolent Institution was founded in 1838, and during the first year their income was a little over £100, and they had two pensioners. Now there were 158 pensioners, 1300 annual subscribers, and many life members. The average age of the pensioners was seventy-six, and forty-five of them were over eighty-two years of age. During the fifty-four years the Institution had been in existence more than £65,000 had been given away in pensions. (Applause.) To maintain this liberality the income must be kept up. Nothing can stand still; it must either go forward or backwards. He hoped, therefore, everyone would do his best in pushing forward the work of this splendid organisation. Being quite a social gathering that evening it was not the proper time to make an appeal for funds, but he would ask all present to recommend the Institution to their friends. Gardeners, as a rule—there were exceptions, he knew—could not contribute much out of their earnings towards the Institution, but they could assist greatly by bringing it before their employers. There were many gentlemen in this country who had never heard of the Gardeners' Royal Benevolent Institution. If they desired to make headway they must put their shoulders to the wheel. There was an idea abroad that they were rich, because their funded property brought them in about £700 a year, but that was totally insufficient to meet the demands of the pensioners. What was needed was an increase in the annual subscriptions. Each year they lost by death annual subscribers, and to continue to pay away £2700 yearly the number of supporters must be

maintained. They all knew that one or two other gardening charities had been established, including the Royal Gardeners' Orphan Fund, and he desired to see that prosper, as it was doing. (Hear, hear.) But he also hoped that the older one would hold its own. Whilst remembering that they had a good backbone, the sum at disposal for the relief of the needy was, as he had said, not enough. There had been twenty-four candidates refused that day, some of whom had made repeated applications. He personally knew one who had been elected, and who would look upon the £20 a year as a small fortune. The new rule which gave subscribers power to vote according to the length of time they had assisted the Institution he considered one of the best that had been made. He trusted the Institution would continue to prosper. He had pleasure in proposing the toast and coupling the name of Mr. Nutting with it. (Applause.)

Mr. Nutting, in briefly responding, said he was one of the oldest members, and remembered the Institution since 1848, about ten years after it had started. Since that time he had taken a great interest in it. On behalf of the Institution he would return thanks for the manner in which the toast had been received. What they had done in the past he was sure would be done in the future. (Cheers.)

Mr. H. J. Veitch proposed "The Executive and Workers of the Institution," and said that for the moment he would, as Treasurer, exclude himself for the purpose of rendering the toast. The Executive and workers were a very important body of gentlemen. They had as Trustees Mr. Sherwood, Dr. Hogg, and Mr. John Lee. Then the Auditors did their work well, and to Mr. Peacock, their Honorary Solicitor, they were much indebted for the kind way in which he had revised their rules during the past year. They had not received a single complaint in regard to this matter, which said much for Mr. Peacock's ability. (Hear, hear.) There were twenty-four Committeemen, and one-third of these were, in accordance with their rules, practical gardeners. In the interest of the Institution they had selected those on the Committee who resided as near the metropolis as possible, so that they could attend the meetings. As to the Secretary he would say but little then, and as regards the Scrutineers they carried out their arduous labours in a most efficient manner. This would be understood when he mentioned that no less than 52,317 votes had been polled that day. He would couple the names of Mr. Monro and Mr. Cutbush with the toast. (Cheers.)

Mr. Monro briefly responded, remarking that to show the interest the Committee took in the work he might mention that the average attendance at the meetings was fifteen, which spoke well out of twenty-four members. Mr. Cutbush said that he assisted in the work of scrutineering the voting papers, because being young he considered it a duty to help those who were in need of assistance.

Mr. A. Moss gave the toast of "The Chairman," and said that Mr. Sherwood had done much towards benefiting the Institution. Since he took the chairmanship, in 1886, the coffers of the Gardeners' Royal Benevolent Institution had been considerably replenished, and last year, to celebrate the jubilee of his firm (Messrs. Hurst & Co.), Mr. Sherwood, with his usual beneficence, gave £100. They would agree with him that a gentleman who had been the means of adding so much to the funds deserved to have his health drunk, and he wished him long life and continued prosperity. (Cheers.)

Mr. Sherwood, in responding, said he had done his best in furthering the interests of the Institution, simply because his business brought him amongst gardeners, and it was a duty to render all possible aid to such worthy charities. It gave him very great pleasure to be able to do so, and his time and money—to a certain extent—were at the service of the Institution. (Hear, hear.)

The Chairman then proposed the health of "The Secretary," and remarked that in Mr. Ingram they had a perfect Secretary. The late Mr. R. Cutler undoubtedly made the Institution what it is, and when he died they thought there would be some difficulty in finding a secretary to follow in his footsteps. They had, however, been favoured, and if the metropolis had been searched through, a more popular, energetic, and deserving man than Mr. Ingram could not be found. (Hear, hear.) He was sure that Mr. Ingram took great interest in his work, and was determined to make the Institution even more prosperous. One of the auditors, Mr. Swift, a member of his staff, informed him that it was a pleasure to look through the books of the Institution, they were so splendidly kept. (Cheers.)

Mr. Ingram, in responding, said he would do in the future what he had done in the past, and with the assistance of the Committee, would always work in the interests of the Institution.

TOP-DRESSING CONIFERS AT DROPMORE.

I COULD but notice when at Dropmore recently that Mr. Herrin had been assisting some of the Coniferæ growing there by adding top-dressings of clay taken from the bed of a large pond during the winter. The late Mr. Frost fully realised the importance of these top-dressings, and Mr. Herrin now not less so. Any garden refuse or wood accumulations, trimmings from roadsides, and vegetable matter, allowed to decay furnish an excellent dressing, which keeps the roots near the surface. There can be no doubt but that myriads of what were very fine Conifers in the country now becoming thin and ragged in appearance have become so because the roots have gone deep in search of food and moisture which they fail to find below, whilst had they been from time

to time top-dressed, would have fed the roots liberally and kept the trees in almost luxuriant growth.

The giant *Araucaria* at Dropmore is one of the best examples anywhere of the value of top dressing Conifers, for there have been from time to time frequent additions made to the surfacing or mulching, and the tree is now not only the finest of its kind in the kingdom, but it is doubtful whether, for its exceeding height, there is a specimen in the whole world so grandly furnished right to the ground as this one is. Of course there are many Conifers there planted on the lawns that cannot be so treated. These have to take their chance. Away in the remoter woods grand specimens crop up constantly, and in every case where top-dressing can be furnished it is productive of great good. With a soil naturally light and loose an addition of clay is found to be exceedingly helpful. All about the grounds where the *Rhododendrons*, *Azaleas*, *Kalmias*, *Andromedas*, and other shrubs are in wonderful profusion, there is a grand promise of bloom, and about the middle of May the place will indeed be gloriously beautiful. In spite of all that has been written about Dropmore, it still remains a delightful show place, and seems always to be as fresh as it is enjoyable.—A. D.



JUDGING AT EDINBURGH SHOW.

WITH reference to "Outsider's" (page 55) opinion that if the Committee had acted as he suggests in informing the judges that they considered the award was wrong, but were powerless to alter it, they would have earned the goodwill of exhibitors generally, by doing all that lay in their power. I am acquainted with a case where the judges' decision was questioned, the exhibits examined by practical men, including members of the Committee, and found not to be in accordance with justice. The Committee instructed their Secretary to write to the unfortunate second prizewinner, and say how sorry they were that a mistake had occurred, but at the time they had every confidence in the judges, who had been recommended to them as possessing practical knowledge; but they found otherwise, and that they (the Committee) would see in the future that fit and proper persons were appointed as judges regardless of expense. The second-prize man forgave the Committee their share of the blunder that deprived him of a silver cup. This same Committee by that single action regained absolutely the confidence of exhibitors.—AN EXHIBITOR.

MRS. L. C. MADEIRA.

I SEE in last week's Journal (page 55) that "E. M." speaking of Mrs. L. C. Madeira Chrysanthemum says it resembles Mabel Ward. I fancy he cannot have the true variety. It has the same shaped petals and of the same colour as *Jardin des Plantes*. It is one of the best growers of any incurved I know, but late; I had a number of plants at Christmas with six good blooms on each. Although not grown for exhibition the blooms would have beaten any *Jardin des Plantes* I have seen this year. It will be the best incurved yellow for late flowering, and will keep good all through January. To my mind this is a far better quality in a flower than being useful for a show board only, but I suspect Mrs. L. C. Madeira will be seen at the next season's shows. I send you the only bloom of it I have left, which was cut some time ago. It is not so large as one that you previously described as "extremely rich." I feel confident "E. M." does not know the variety, and he should not criticise what he thought to be Mrs. L. C. Madeira in 1892. I shall be glad to hear what Mr. Owen has to say about it, and what you say about the colour of the bloom sent. Does it approach Mabel Ward more closely than *Jardin des Plantes*?—W. WELLS.

[The bloom in its semi-open state showing the inner side of the florets is as bright as *Jardin des Plantes*; if it were quite incurved, showing the outer side of the florets, it would be a little paler yet brighter than *Golden Empress*.]

USEFUL CHRYSANTHEMUMS.

GENERALLY we want to grow "the best" for a particular purpose. Having during the past few seasons made extensive trials, I can recommend the following varieties with every confidence. The best of all among the earlies is undoubtedly *Ryecroft Glory*. It comes into bloom a few weeks before the glut of November bloomers. The blooms, which are of good substance, are of a rich golden yellow, excellent form, and the habit or growth of the plant has everything to recommend it. When stock will allow it will be largely grown by market men. A decidedly good white is *Lady Fitzwygram*. It is very pure and of a useful size. To precede *Selbourne* this is likely to become popular. For a dark crimson, especially for planting out and blooming in the open, nothing equals *John Wolf*. It is fuller, larger, and richer in colour than *Roi des Précoces*, and ultimately will replace that variety. *O. J. Quintus* is not grown half as much as it deserves. It is the best of the pinks, very free bloomer, and of capital habit. The colour shows well by artificial light. When it expands in the open air the colour is darker and not so taking.

The above quartette by no means exhaust the list of good and useful early or October blooming varieties. Undoubtedly the best late white is *L. Canning*. It has a capital habit of growth, dwarf, and sturdy. The blooms are large and very pure. Many persons make a mistake with this variety in stopping the growths too late, June 30th is quite late enough for the final pinching. *Golden Gem* is a first-class yellow, but when grown in beds and potted in October—the plan some growers adopt—the blooms come bronze. The best golden yellow is Mrs. E. G. Hill, the best blooms being produced on plants stopped about the latter end of July.—W. J. GODFREY.

NATIONAL CHRYSANTHEMUM SOCIETY.

THE General Committee of this Society held a meeting at Anderton's Hotel on Monday evening last, when the chair was occupied by Mr. R. Ballantine. It was announced that the whole of the nominations for judges at the Society's shows in October, November, and December had been accepted, and also that it was proposed to hold the annual meeting on the 19th February.

Interesting correspondence was read from the Victorian Horticultural Society concerning Chrysanthemum cultivation and exhibition in that colony, and from the Curator of the Missouri Botanic Garden in respect to the work of floral nomenclature undertaken at the instance of the Society of American Florists. Mr. J. R. Starling, who has acted as the Society's Treasurer for many years, tendered his resignation; but the Secretary was instructed to ask him to reconsider his decision before the annual meeting. The report of the Schedule sub-Committee was then presented. The principal items appear to be the institution of a class for hairy Chrysanthemums and additions to the metropolitan classes for amateurs. The term "amateur" as now adopted by the Society is one who does not employ paid assistance of any kind in the culture of the Chrysanthemum or advertises them for sale. In class 40 for a group of Chrysanthemums there will be foliage plants added, and the space reduced to 60 feet instead of 100. The specimen plants may be disbudded at the option of the exhibitor, and a new class is proposed for six single flowered Chrysanthemums, bush form, not formally trained, with prizes of £2, £1 10s., and £1. For table decorations gold, silver-gilt, and silver medals will be offered, and for Chrysanthemums with long stems some good money prizes are also promised. Vases of Chrysanthemums are also provided for. Among the donors of special prizes are Mr. H. J. Jones, Mr. Godfrey, Mr. W. Wells, and Messrs. Cutbush & Sons. The above constitute the most important items concerning the great November Show, the others in October and December being but little interfered with. There were three societies—the Dulwich, Stoke Newington, and the Teignmouth admitted in affiliation.

STOPPING CHRYSANTHEMUMS.

THE information would be most opportune if growers of Chrysanthemums were to state their views as to the most suitable time to stop or top Chrysanthemums which are being grown on the specimen bloom principle, so that the buds will show at proper dates for them to develop into handsome and well coloured flowers. By discussing the dates now it would prove valuable for the coming season. At the time the buds are showing notes on this subject are of frequent occurrence, but in one sense they are valueless, and which often appear inexplicable to that greater body of smaller growers who are looking out for information. It is easy enough to say that the buds which are showing at that time are too early, and that the shoots must be run on to the next bud. Very simple all this appears, but unfortunately if the crown bud which shows is too early the next one in many cases proves too late, or the flowers when they do appear are of little value.

There are often cases stated that it is too early to take the buds of certain varieties, when those who are responsible for the information should know that the next bud is worthless. For illustration of this kind of information I will state *Sunflower*, *Stanstead White*, and *Avalanche*, the terminals in each case proving worthless. The notes are needed essentially for the very popular Japanese section as well as the incurved, and with which it depends greatly upon the time the buds are taken whether they will prove satisfactory. To treat all the varieties upon the same principle will not do, as if this was done and the plants were grown on what is recognised as the natural system many of the buds would show at most unsuitable dates. What is termed the "crown" bud is the one generally selected, but if this is taken too early the blooms would in the majority of cases prove to be coarse and of poor colour. There may be a difference noticeable and required between early and late districts, but there is not so great as some cultivators lead us to suppose. According to these every district almost requires to be studied, and the buds manipulated accordingly. But this is not so. I am certain a mean could be struck which would prove suitable for the majority.

The time to retard the buds is during the earlier stages of the growth, so that by checking them at this time by stopping, the plants will be enabled to gain strength. From the shoot so stopped the growths are thinned out to one as early as possible, so that the whole force is concentrated in the one shoot, and which must be allowed to grow and take the natural habit peculiar to Chrysanthemums, which are being cultivated for the production of specimen blooms. This retarding will not suit all varieties alike, for if the season should happen to turn out a late one the crown bud would be thrown too late, and which has reference to such varieties as *Stanstead White* and *Avalanche*. In such cases as this the safer plan is to stop a few, and leave the others unchecked. Others require to be stopped the latter part of March, and

take up two or three shoots, and secure the first buds which form. Mrs. Falconer Jameson requires this treatment. Again, there are others which require stopping later still, so as to get the crown buds to form at the best time.

There are so many new varieties that some reliable data from growers who have had opportunities of experiments would prove specially valuable. Another reason why I think information on stopping would be useful is in reference to the height of the varieties. By taking the "crown" bud a dwarf habit is secured, no mean consideration in the majority of gardens. Even where the terminal results in a fairly good bloom, letting the plants run on to this often results in what are supposed to be late varieties turning out quite tall. Tall varieties are not likely to popularise the Chrysanthemum, and we have something to consider besides the exhibition tables. A year or two back we appeared to be in a fair way to secure dwarf habit plants, but this seems to be lost sight of again, several of the newer ones being quite tall.—A. YOUNG.

ABELIA RUPESTRIS.

THIS is a handsome plant for a cool greenhouse, having small oval shining green leaves resembling the Myrtle, and clusters of white tubular or inflated flowers, which are produced in succession throughout the greater portion of the year. Even in a small state this plant is very useful, but when planted out and having attained a good size it is especially beautiful. The accompanying engraving (fig. 12) shows the character of the flowers and foliage, the spray being cut from a plant grown in a light well ventilated structure, in which only sufficient heat is employed to prevent the temperature falling below 40° in winter. In warm southern localities the plant also succeeds well trained to a wall. If grown in pots a mixture of turfy loam with one-third leaf soil and a little sand will be suitable; but it will thrive in any good garden soil when planted out if the position be not too damp.

STREPTOSOLEN (BROWALLIA) JAMESONI.

ON page 57 of the *Journal of Horticulture* you figure a pretty plant, introduced under the name of *Browallia Jamesoni* some fifty years ago, but now generally known as *Streptosolen Jamesoni*. I cannot but think that this revival of an old name, pronounced to be incorrect by the leading botanical authorities when the plant was reintroduced some five or six years ago, after having for many years previously been lost to cultivation, must be confusing to many of your readers. When first introduced it was greatly admired, and was figured in all the leading horticultural works. I think I have no less than five coloured plates of it.—W. E. GUMBLETON.

I WAS pleased to see you direct attention (page 57) to this most beautiful greenhouse flowering plant. Plants that flower thus early in the year are not by any means numerous, but amongst them must be included the *Streptosolen* known to some yet under the old name of *Browallia Jamesoni*. Possessing as it does so many very desirable features it is remarkable that it is not more frequently met with in gardens. The flowers on first opening are pale yellow, but afterwards change to a most beautiful cinnamon red, thereby supplying a colour but little represented among greenhouse plants at any time. The flowering season lasts for a long time, the blooms usually making their appearance in March and continue till the summer is well advanced.

The usual mode of propagating this plant is by cuttings, which should be done during May or June. If possible take the cuttings with a heel attached, and insert them in sandy soil, afterwards placing them in a propagating frame or under a bell-glass. When rooted it is very essential that they be placed in a light airy position near the glass, but shaded from bright sunshine. See that the plants do not suffer from want of water or through being allowed to become root-bound. By also inserting a few cuttings about the beginning of April plants may be obtained that will, provided all due attention be paid to their requirements, commence opening their flowers about Christmas and continue on till the others come in.

This *Streptosolen* is admirably adapted for a variety of positions under glass, but I think by far the best effect is produced when trained around pillars, or along the roof of the greenhouse or conservatory. The plants should on no account be subjected to severe training, as by far the best results are obtained by allowing the growths to assume a loose hanging condition. By this method a more graceful and pleasing effect is secured, the flowers being produced, as shown in the illustration last week, on the extremities of the branches in dense clusters of from fifty to sixty flowers in each.

After flowering, enough of the strongest shoots should be selected to make the plants of an even appearance, removing all superfluous and weak growths, as no advantage is derived by unduly crowding. The plants should then be taken out of the pots, and a portion of the old soil removed, afterwards replacing them in the same sized pots. A compost of good fibry loam and leaf soil in about equal proportions, with a fair amount of sharp sand and a little well dried cow manure, will be found suitable for them. After the pots are well filled with roots, liquid farmyard manure, especially drainings from the cow sheds, may be applied about twice a week with very beneficial results.

Although the *Streptosolen* succeeds best when afforded plenty of rooting space, some neat compact specimens for intermixing with other plants may be obtained in 6-inch pots, provided they are pinched occasionally during the summer.

There is another mode of cultivating the plant, viz., that of planting it out. I would strongly recommend this method where the plants can occupy the same position as a permanency. Prepare a suitable bed or border for the reception of the plants. All the old soil should be removed to a depth of about 18 inches or 2 feet, after which a layer of clinkers or old brick rubble may be placed on the bottom and a little long straw placed over them. This is a very important item towards successful cultivation, for if sufficient drainage is not allowed the soil is apt to become stagnant and failure will be the result. After the drainage is properly prepared the hole should be refilled with a similar mixture to that recommended for plants in pots, the after treatment also being the same.—G. PARRANT.

ROYAL METEOROLOGICAL SOCIETY.

THE annual meeting of this Society was held on Wednesday evening, the 17th instant, at the Institution of Civil Engineers, Westminster; Dr. C. Theodore Williams (President) in the chair. The Council in their



FIG. 12.—ABELIA RUPESTRIS.

report stated that the Society had made steady and uninterrupted progress during the year, there being an increase in the number of Fellows, and the balance of income over expenditure being greater than in 1892. They also reported that Dr. C. Theodore Williams, previous to vacating the office of President, had expressed a desire for the formation of a fund for carrying out experiments and observations in meteorology, and that he had generously presented to the Society the sum of £100 to form the nucleus of a research fund.

The President, Dr. C. Theodore Williams, in his valedictory address gave an account of the climate of Southern California, which he made most interesting by exhibiting a number of lantern slides. In the autumn of 1892 Dr. Williams visited this favoured region chiefly with a view of investigating its present and future resources and its suitability for invalids. After describing the entrance into California from Utah and Nevada, the general geography, and the mountain ranges, he pointed out that the mountain shelter is tolerably complete, and that the protected area consists of (1) valleys, chiefly running into the coast range from the sea and rising to various elevations, such as the fertile San Fernando and San Gabriel valleys; or else (2) more or less extensive plains, as those of Santa Ana and San Jacinto. Southern California is subdivided into two portions, eastern and western, by the Sierra Nevada and its spurs, the San Gabriel and San Bernardino mountains. The climate of the eastern portion, which is an arid region, is very dry, very hot in summer, and moderate in winter.

The climate of the western portion has three important factors, viz., 1, Its southern latitude; 2, The influence of the Pacific Ocean, and especially of the Kuro Suvo current, which exercises a similar warming and equalising influence on the Pacific coast of North America as the

Gulf Stream does on the western coasts of the British Isles and Norway; and 3, The influence of mountain ranges, these affording protection from northerly and easterly blasts, and also condensing the moisture from the vapour-laden winds blowing from the Pacific. Dr. Williams then gave particulars as to the temperature and rainfall at Los Angeles, San Diego, Santa Barbara, and Riverside. From these it appears that the climate of Southern California is warm and temperate, and on the whole equable, with more moisture than that of Colorado, and that it is a climate which would allow of much outdoor life all the year round.

The President next described the effect of the climate on vegetation, and showed what results had been obtained by diligent watering and gardening in this beautiful region. Wine and brandy are made in South California; but Oranges and Lemons are the leading crops, varied with Guavas, Pine Apples, Dates, Almonds, Figs, Olives, Apricots, Plums, and vegetables. On higher land Apples, Pears, and Cherries bear well, and our English summer small fruit is also grown; while Strawberries ripen all the year round, and are plentiful except in July and August. Dr. Williams concluded by saying that many an invalid has regained vigour and health as well as secured a competence in the sunny atmosphere of Southern California.

Mr. R. Inwards, F.R.A.S., was elected President for the ensuing year



HARDY FRUIT GARDEN.

Completing Winter Pruning.—It is desirable that all fruit trees in the open quarters, Pears, Apples, Plums and Cherries on walls, should forthwith, if not already done, have the superfluous and crowded wood removed, the trees cleansed if necessary, and the branches of wall trees readjusted, securing them with strong ligatures, also thinning out or reducing rank clusters of spurs.

Preserving Gooseberry and Currant Buds.—Some persons leave the pruning of Gooseberries till the spring, inasmuch as birds, chiefly bullfinches and voracious sparrows, do immense damage in denuding bushes of their most promising buds. When, however, it is desirable to complete the pruning of Gooseberries at once, it is a good plan, in order to save the buds, to dust the bushes with fine dry lime. It adheres readily when the trees are wet, but the operation of applying it is unpleasant during heavy rain. It is much easier to dredge it on the trees in dry weather, first making the shoots wet with a fine-rosed watering can or a syringe. Apply the lime liberally, and the bushes when dry will be quite white. It may be used on Gooseberries and Currants either before or after pruning.

Pruning Gooseberries.—Moderate sized bushes containing a fair amount of young wood evenly disposed throughout, so as not to unduly crowd are sure of giving good returns of fruit. Remove downward and inward growing shoots and those close to the ground, making allowance for the natural habit of drooping varieties; also shortening rambling growths to make the bushes compact in shape. The shoots dispensed with to prevent overcrowding shorten to an inch for forming spurs. On walls and trellises spur-pruning must be adopted.

Pruning Red and White Currants.—Having secured a fair number of main branches about a foot asunder, shorten the side growths to within an inch at the winter pruning. The leaders of each branch must be shortened back yearly to 8 or 9 inches, until a sufficiently large bush is produced, when they may be closely stopped like the side shoots. The secret of maintaining fruitfulness is to regularly pinch the side growths in the summer to six leaves, thus admitting light and air into the interior, and concentrating the sap on a few buds. Apply surface dressings of rich manure to the soil in the winter, and copious supplies of liquid manure in the summer.

Old Currant Bushes.—Those with thick main branches, spurless at the base and upwards to a great extent, ought not to be tolerated for long without some attempt being made to renew their vigour by originating new shoots, cutting the old ones away. This can easily be done by selecting a strong growth, either from the base of such above or below the ground line, or a prominent sucker springing up in a suitable position. Very old and fungus-stricken bushes should be discarded, grubbing up and burning them, then the ground must be deeply dug, sweetened, and enriched before planting young vigorous trees.

Black Currants.—Similar treatment to that given to Red and White Currants in every respect, except pruning, is accorded to these. The fruit is produced on young strong wood, the best of which ought yearly to be retained nearly at full length, and the old bearing wood cut away, avoiding crowding in any part. Bushes are mostly grown without any visible main stem, suckers springing up freely and forming the fruitful growths during the second year of their existence. Those with a portion of clear stem above ground do not produce suckers, but young growth is encouraged from the lower branches.

Pruning Dwarf Apple Trees.—Young dwarf trees must have the growth freely thinned and regulated to induce shapeliness, the main

shoots left not closely shortened but pruned back about one-third to where firm wood obtains. In most cases an outward pointing bud will be the best to prune to, though note should be made of the spaces required to be filled, and prune accordingly. Vacant parts of the trees may eventually be occupied with growth by shortening a suitable shoot rather closely—say, four to six buds, to induce a more vigorous extension. Side shoots on the principal branches shorten to three buds. These will develop into fruit buds.

Pyramid Apples and Pears.—Endeavour to have the branches of pyramids a foot asunder. In the summer light and air will then reach the base of each. Thin out the spurs if crowded, and shorten the elongated portions, endeavouring to have each branch a cordon, clothed with short spurs of a fruitful character.

Apple and Pear Trees on Walls.—Treat these on the same lines, especially thinning out the branches if much less than a foot asunder, as it is impossible to keep spurs close to the wall if this precaution is neglected. Light is so essential that they must have ready access to it, or they will grow out to seek it, and in doing so the spurs below are shaded to an undue extent, so much so sometimes as to cause the lower branches to become permanently barren and weakened.

Cordon Trees.—These suffer from having the branches crowded if such were not trained at the proper distances in the first instance, or in the case of single-stemmed cordons not planted wide enough apart. They can, moreover, be crowded too much with spur growth by injudicious methods of treatment. To leave the foreright shoots unstopped in the summer is a practice which prevents fruit buds forming freely. The necessity which then follows for cutting this amount of superfluous wood hard back invariably results in still stronger woody growth. All the pruning that ought to be necessary now is the shortening of the previously restricted side growths to a few buds, training in the leading growths at full length, unless the space to be covered is already filled, when of course close stopping must be done.

FRUIT FORCING.

Vines.—*Early Forced Vines in Pots.*—Although it is desirable to thin the berries somewhat freely it is essential that enough be left to form compact bunches. The temperature should be maintained at 65° at night, falling to 60° on cold mornings, 65° to 70° by day, admitting air at 75°, increasing the temperature with sun heat to 80° or 85°, closing the house at 80° with a prospect of an advance to 85° or 90°, at the same time damping the house. Sprinkle all surfaces in the morning and in the evening when sharp firing is had recourse to, but avoid creating a steam. Great care is necessary in ventilating, admitting a little air at a time so as not to reduce the temperature but to prevent its rising suddenly to an unsafe point. Afford copious supplies of liquid manure a few degrees warmer than the mean temperature of the house.

Early Forced Planted out Vines.—Remove all duplicate bunches, thinning the berries immediately they are well formed. Give attention to tying the shoots and stopping the laterals. It is assumed that the shoots have been stopped two or three joints beyond the fruit. Where the space is restricted they may be pinched to one joint or at the bunch. In any case the axillary growths may be stopped at the first leaf and to one joint afterwards, as fresh growth is made. If this is likely to interfere with the principal leaves the laterals may be rubbed off, except from the two lowest leaves, those on a level with and above the fruit being stopped to one joint. It is of the utmost importance that the principal foliage be fully exposed to light and air, overcrowding being highly prejudicial; at the same time very close stopping is not to be recommended where there is room for extension, as an increase of foliage promotes root action, therefore preserve all foliage consistent with its full exposure to light. If there are no evaporation troughs or fermenting materials in the house the floors and borders may be sprinkled with diluted stable drainings or liquid made by placing 1 lb. of guano in a tiffany bag and putting it in 16 gallons of water to dissolve, stirring before use so as to leave nothing in the bag but the insoluble particles. This will prevent the rose of the watering pot getting clogged, and 3 gallons of the liquid suffices for sprinkling a square rod of path or borders.

Where results are of more consequence than general appearance the whole of the outside border may be surfaced with thoroughly sweetened horse droppings, which should be turned over several times before it is introduced, or the ammonia will be too strong for the tender foliage. This must be guarded against by admitting a little air by the top lights to allow any excess of steam to pass off, as it will in a day or two. The inside border should have a good supply of tepid water when needed. This passing through the mulching will incite root activity, and with the leaves in good condition the berries will swell freely. The heat of fermenting materials on outside borders must not be allowed to decline, but should be renewed as required. Where no fermenting materials are employed prevent the roots in outside borders becoming chilled, having a tarpaulin or other waterproof material so disposed temporarily as to throw off the rain or melted snow.

Houses in which Vines are in bloom should have a steady night temperature of 65° maintained, 70° to 75° by day artificially, and 5° to 10° more from sun heat; Muscats 5° higher all round. Black Muscat and even Madresfield Court, also Muscat of Alexandria and other varieties liable to set indifferently, may be assisted by tapping the bunches every day, or more certainly by applying ripe pollen, drawing a brush lightly over the bunches. A constant circulation of dry warm air is

conducive to a good set, and it is advisable not to stop the growth closely during the setting period. If any varieties are deficient of pollen it may be taken from those affording it freely, as Black Hamburgs, collecting it in a sheet of paper, and then loading a brush with it, pass it on the bunches of the shy setters.

Vines Started at the New Year.—Continue to syringe the rods twice a day until the bunches are formed, when it is best discontinued, but maintaining plenty of atmospheric moisture by damping the paths and borders three times a day. Increase the temperature to 55° at night, and 60° to 65° by day, with an advance from sun heat to 75°, and ventilation in accordance with the state of the external air. It is desirable to keep up a supply of ammonia in all houses by turning over the fermenting materials and adding fresh droppings, or if this be objected to the house may be sprinkled with liquid manure, the evaporation troughs being kept filled with the same.

Houses to Afford Ripe Grapes in July.—Start the Vines at the beginning of February. There is no need to cover the outside border with fermenting materials, but there is absolute necessity for applying a covering of leaves or litter so as to prevent the soil being frozen. If the Vines are planted outside, see that the stems are well protected by hay-bands, for if these become frozen after the Vines have started into growth it is certain they will receive a severe check and the crop be lost. Syringe the rods three times a day, maintaining a temperature of 50° at night and 65° by day with sun heat. Supply inside borders with tepid water or liquid manure, and repeat as necessary so as to bring the soil into a thoroughly moist condition, but not making it sodden and sour.

Cucumbers.—**Raising Plants in Frames.**—Persons who do not sow seed before February often cut fruit quite as early as some do with an inadequacy of heat-furnishing material and who sow at the new year. The material for making up the bed for raising the seedlings being in a fit condition for turning over and mixing with leaves, so as to induce a sweet regular heat, a site for a bed should be chosen with full southern aspect, and having shelter to the north, as that of a hedge or wall. If the ground be rather higher where the bed is to be formed than the surrounding ground level all the better. Mix and beat the materials well down with the fork as the work proceeds, making the bed about 5 feet high at the back and 4 feet 6 inches in front, which will allow for settling, as it will do about one-third. A few Pea sticks placed across and along the bed at intervals not only prevents overheating, but admits the heat from the linings being conveyed to the interior of the bed.

For early work frames with an inner lining are an advantage. They are formed by placing half-inch boards 11 inches in depth at the back and 9 inches in front, with the bottom edges level with the bottom of the box, nailing strips of wood an inch wide and thick on the inside of the box, and then the boards, which form an inch cavity all around the inside of the frame, and thus top heat is furnished. In a week after making up the bed and putting on the frame and light, level the surface of the bed and replace the box and put in sufficient sweetened fermenting material to raise the inside to within 4 inches of the inner frame or casing, placing partially decayed rather dry leaves or sifted spent tan on the manure, for plunging the pots in about 3 inches.

For raising the plants, 3-inch pots are half filled with light rich loam, placing one seed in the centre of each pot, covering about half an inch with fine moist soil, so that no water is needed for the germination of the seed. Space is thus left in the pot for top-dressing, which is preferable to potting the plants. A square of glass placed over each pot will hasten the germination, but it must be removed as soon as the plants appear. The plants from a sowing made early in February will be ready for planting early in March, and will afford fruit at the end of April or in May.

Strawberries in Pots.—When the plants commence flowering admit air freely, remove the weaker blossoms, and when the pollen is ripe brush the flowers lightly with a feather. After the fruit is set thin them to about half a dozen to each plant, more or less, according to the variety. Whilst the fruit is setting, 50° to 55° will be sufficient heat, but after the setting is effected remove the plants to a house with a temperature of 60° to 65° artificially, and 70° to 75° from sun heat in the daytime, supplying liquid manure until ripening commences, then employ water only and sparingly. See that successional plants do not require water without promptly supplying it, and are not brought too rapidly in the early stages. If there be any trace of aphides fumigate moderately, so as to have the plants perfectly clean before they come into flower.

Melons.—Add a little soil as a top-dressing as the plants grow, having them near the glass to prevent drawing. Keep a sharp look out for slugs. A ring of soot or quicklime placed round the plants will generally preserve them, but these pests and woodlice may be trapped by placing a little bran on a slate, and inverting the half of a Swede or Mangold Wurzel, with the centre scooped out, over it, examining in the morning for the woodlice and in the evening for the slugs. Soil should be placed under cover, so as to become dried preparatory to forming it into hillocks or ridges in the Melon house. Good strong yellow or hazel loam is suitable for Melons, and if it has been laid in ridges, so as to reduce the herbage, it will be in a fitting state for the purpose. If deficient of grit add a fifth of road scrapings, and if not calcareous a similar proportion of old mortar rubbish. If there is need to add manure, nothing is better than fresh horse droppings. The composition in that case would be four parts of loam, one part each of horse droppings, road scrapings, and lime rubbish.

THE FLOWER GARDEN.

Tuberous-rooted Begonias.—Very small seeds, or all that of necessity are sown on the surface of soil, germinate freely in January and February. Tuberous Begonias also need to be sown early if the plants are to be grown to a size large enough for bedding out in June next. New seed invariably germinates the most quickly and strongly. Prepare pans by well draining, and then filling with a mixture of loam and leaf soil sifted fine, adding a sprinkling of silver sand. Make the surface perfectly level, and give a gentle watering, or enough to well moisten the soil. It is a mistake to surface over with sand.

The seed should be sown about three hours after watering the pan, quite on the surface, thinly, and regularly. Avoid letting it get together in patches. It will germinate most surely if given the benefit of a brisk, moist, bottom heat. Cover the pans closely with squares of glass and shade till it is seen the seeds have germinated, after which light should be gradually admitted, but no sunshine ought to reach the seedlings. The soil must be kept uniformly moist, but no water should be applied to the surface. Whenever necessary partially immerse the pans in a pail, tub, or tank of lukewarm water, the soil thus becoming moistened upwards. Tilt the glasses slightly, when the seedlings are plainly visible, by way of a preventive of damping. Seedlings should be pricked out directly they can be moved with a pointed stick in one hand and a forked pointed stick, for lifting them out with, in the other. Last year's tubers should be kept dry and cool for several weeks longer, but if there are any strong old bulbs of good varieties it is desirable should be increased as much as possible, place these in boxes of light loamy soil and start in a vinery or Peach house being forced. They may be split after having made shoots about 2 inches in length.

Dwarf Lobelias.—If there is a good stock of old plants—these having been kept with a view to obtaining cuttings, or, better still, divisions—keep them in an intermediate temperature. Exposing them to high temperatures, and fire heat in particular, causes the young growths to harden and commence flowering, and to become, therefore, unfit for propagating purposes. Succulent tops root very quickly in heat, and in their turn give cuttings. The best plants, however, can be obtained by dividing old plants freely when they are emitting roots above the soil. Seeds of a reliable strain should be procured and sown at once, very much as advised in the case of Tuberous Begonias. If this is done now no great difficulty will be experienced in having extra strong plants to bed out next June.

Antirrhinums and Pentstemons.—Cuttings of choice or named varieties that were rooted last autumn and wintered under glass should be kept where they are for some time longer, and given plenty of air in order to prevent a premature and spindly growth. Varieties nearly, or quite, as good can be had by sowing seed saved from the best strains, and by proper cultivation the plants will flower strongly the same season as raised. Sowing seed early, or not later than the first week in February, is the first preliminary. Prepare pans as for Begonias. Sow the seed thinly, cover very lightly with fine soil, set in brisk heat, place squares of glass over pans, and shade heavily. After the seedlings appear admit light and air, and later on place on a shelf in a moderately warm house a fortnight, or rather longer, prior to pricking them out into other pans or boxes.

Wigandias.—Where a few or many sub-tropical plants are put out Wigandias caracasana and imperialis should be grown. A single packet of seed would give far more plants than are needed; but they must be raised early in order to have them large enough for effective grouping in the summer. The seed is very minute, and should be sown and treated exactly as advised in the case of Tuberous Begonias.

Zonal Pelargoniums.—Since the introduction of varieties greatly improved in floriferousness it is found that spring-rooted plants are quite as serviceable as those raised in the autumn, and it not unfrequently happens that spring-rooted plants of the variegated and golden-leaved varieties actually surpass older plants. Cuttings, however, will not readily root if taken off before sap movement has well commenced—that is to say, if the tops when cut are hard and dry. All old plants that are to produce cuttings should be first started in mild heat, such as that of a newly started vinery, and if kept in this heat many cuttings may be taken off and rooted in time for bedding out. As a rule it is a mistake to cut off the tops of autumn-raised plants, as the latter seldom do well after the severe treatment given. If, therefore, the young plants have been wintered thickly in small pots, pans, or boxes, all that should be done to them is to pinch out their points preparatory to shifting, and giving them more room in other pots, pans, or boxes. The Ivy-leaf Pelargoniums usually root better in the spring than they do in the autumn, and a good stock might be worked up from a few old plants placed in heat now.

Various.—Old plants of Heliotropes introduced into gentle heat now would soon give a number of soft, easily rooted cuttings, and the propagation should commence early if strong plants are desired for bedding out. Verbenas also may well be started into active growth, but beware of exposing them to a strong dry heat, or of placing them very near to hot-water pipes. Only clean succulent cuttings can be grown into serviceable plants. If cuttings have been wintered thickly in comparatively small pots do not break them up, but shift them into larger pots, and they will produce good cuttings. Lightly top old plants of variegated Abutilons, and start in heat. Side shoots taken off with a heel root readily, and will develop into strong plants in time for bedding out.

THE BEE-KEEPER.

APIARIAN NOTES.

FOUL BROOD.

"A LANARKSHIRE BEE-KEEPER" (page 60) speaks of his bees being busy. I wish I could speak with assurance about my bees. I have foul brood in my hives very bad; at least, it was so in the autumn. I made an effort then to cleanse my apiary of it, and I am anxiously waiting to see what the spring will reveal. If "A. L. B." has any suggestions to make on that subject I would be very pleased to hear them.—A. M.

The above is another failure to cure the plague by the method advised by our modern sages, and another request of several of a similar nature I have received of late. It is somewhat singular that people will allow themselves to be misled by advisers who are incapable of extirpating the fell disease in their own neighbourhood—*vide* the naphthaline discussion some time ago in the *Journal of Horticulture*—then, as a last resource appeal to us. Had they done so at first, disappointment and loss would have been at an end, and the apiary would have been healthy and profitable instead of diseased and worthless.

In "A. M.'s" case no time should be lost in making a thorough examination of all the hives. In every one showing the slightest signs of the disease the bees should be separated from the combs and put into an empty but thoroughly disinfected hive, fed for a day or two, then transferred to another clean one but supplied with foundation. Feed regularly and examine them at intervals during the spring. One diseased cell is sufficient to warrant the destruction of the contents of any hive.

If such a course is pursued with foul broody hives at the present time the disease may be stamped out, while the manipulation will not seriously affect the colony from a profitable point of view during the coming summer. In order to keep the apiary healthy during subsequent years sanitary hives of the Lanarkshire type must be used, and managed so as to keep the bees healthy. Two prime causes of foul brood are ill-conditioned hives during the winter and mismanagement in the summer by overheating.

BEEES FOR GARDENERS AND FARMERS.

I am far from holding out hopes of gardeners and farmers obtaining wealth or even a livelihood from bees alone, knowing full well the trouble and expense in keeping bees, as well as the risk of overstocking any district, and the uncertainty of getting a remunerative price for the produce. Still, there is room for many persons to engage in the pursuit if entered on judiciously and in moderation. It serves a purpose for some persons to encourage bee-keepers to start extensive apiaries, but assuredly those who do so in an already well stocked district will regret it. It is continually stated that honey is more wholesome than butter, but for farmers to keep bees to lower the price of butter is scarcely in accordance with the spirit of agriculture. For gardeners bees are more in keeping with their calling, and a garden without bees is vacant of something it should possess.

Hives may either be purchased or better made at a trifling outlay by gardeners and farmers, and although the production may be greater than the demand, there is always a saving of something else where there is an abundance of honey in a numerous family. When people come to realise the value of honey there will be a greater demand for it. Meanwhile those who intend to start bee-keeping should consider the time they have at their disposal to attend to the bees. Where proper attention is wanting profit ceases, and to employ caretakers is not keeping bees for your own advantage.—A LANARKSHIRE BEE-KEEPER.

TRADE CATALOGUES RECEIVED.

W. Atlee Burpee & Co., Philadelphia, U.S.A.—*Farm Annual, 1894.*

John Cowan & Co., Limited, The Vineyard and Nurseries, Garston, Liverpool.—*Vegetable and Flower Seeds.*

Ralph Crossling, The Penarth Nurseries, Stanwell Road, Penarth.—*Vegetable and Flower Seeds, and Fruit Trees, Roses, and Shrubs.*

Tom B. Dobbs & Co., 32, Queen Street, Wolverhampton.—*Flower and Vegetable Seeds.*

Peter Henderson & Co., New York.—*Manual of Everything for the Garden.*

Hogg & Wood, Coldstream, N.B.—*Garden Seeds.*

Letellier & Sons, Caen, France.—*Fruit Trees and Shrubs.*

R. Smith & Co., Worcester.—*Vegetable and Flower Seeds.*

J. R. Tranter, 3, Hart Street, Henley-on-Thames.—*Vegetable and Flower Seeds.*

Vilmorin-Andrieux & Cie, 4, Quai de la Mégisserie, Paris.—*Vegetable and Flower Seeds.*

TO CORRESPONDENTS

* * All correspondence should be directed either to "THE EDITOR" or to "THE PUBLISHER." Letters addressed to Dr. Hogg or members of the staff often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post, and we do not undertake to return rejected communications.

Three Questions (Inquirer).—Replies will be given to your questions in our "next issue," as you desire. They did not arrive soon enough for being answered this week.

Books (A. M.).—Mr. H. E. Milner's book may possibly suit you. His address is 7, Victoria Street, Westminster. (J. F.).—The seventh edition of *Mushrooms for the Million* is reprinting, and will shortly be ready for distribution.

Spraying Fruit Trees (F. J.).—Your letter is too indefinite. You do not say what you wish to spray for, or against, and only mention Paris green on the outside of the envelope. This is used in spring as soon as the caterpillars hatch from the eggs of the winter moth. It will not destroy the vitality of the eggs. Please mention the name of the appliance to which you refer; more than one have been advertised.

Cape Broccoli (E. T. H.).—Early White Cape is somewhat earlier, and has a less close and white head than Grange's White, which is larger and better—more like, if not really, a Cauliflower. Sow in April, and plant out when ready in rich soil about 2 feet apart every way. If sown before the middle of April, or the plants get drawn and weakly in the seed bed, there is danger of "bolting" or premature heading, especially if the summer prove hot and dry.

Black Dots on Under Side of Strawberry Leaves (Cycla).—The small shining black dots are the eggs of aphides, which in due course will hatch, and the parthenogenetic insects emerging will infest the buds or expanding young leaves and trusses of bloom. No insecticide will destroy the eggs without also killing the leaves; but when the aphides appear they should be promptly annihilated—under glass by fumigation, repeating at intervals so as to have the plants perfectly clean before they come into flower. Outdoors you may use a decoction of quassia chips, or dust the plants when the young leaves appear with tobacco powder or some advertised insecticide. This is imperative for securing healthy growth and clean fruit. Judging by the black deposit on the leaves and petioles the plants have been badly infested in the autumn with aphides.

Nectarine Trees Losing their Branches (J. G.).—The cause of the Nectarine trees losing the branches on one side one year, and dying on the other side the following year, is gumming. This is due to the growth of a fungus (*Coryneum Beijerincki*) which destroys the inner bark, and encircling the branch cuts off the supply of sap, the part above suddenly collapsing. The excessive vigour of the new growths is abnormal, and the provocatory cause is the pushing of the mycelial threads into the cellular spaces of the young wood, which is followed in due course by a ferment and exudation from the gummy growth, and the branch sooner or later dies. The only known remedy is to cut away all the gummed parts a few inches below where the exudation occurs, and train in young growths. As the spores of the fungus cannot penetrate short-jointed growth with thick elastic epidermal tissues, it is found that lifting those trees which make strong growth induces shorter-jointed and better solidified wood, capable of resisting the fungus and producing better crops of fruit. This we advise, Lift the trees carefully, cut away the diseased parts, if not all at once, as soon as others and healthier are produced to supplant them.

Culture of *Zygopetalum Mackayi* (T. M. Y.).—The following particulars respecting the culture of this plant by two experienced Orchid growers answer all your questions, and should enable you to succeed with the plants. They do not require frequent potting, and a slight rest after the completion of the growth is beneficial, reducing the supply of water, but never attempt to dry them as is practised with some plants. "It is easily grown. Although Brazilian it makes grand growth in a cool airy house during summer. The largest growths we ever saw were made in a cool, moist, airy, and partially shaded Odontoglossum house. Everyone admired them, but they did not flower. The Mexican-house temperature was next tried: 90° on hot days, no shade, no fire heat at night, when the temperature fell to 45° or 50° very often.

So grown the psuedo-bulbs were smaller, the leaves shorter, and almost yellow rather than green, but the growths were sturdy and vigorous. Some gave two spikes, each spike bearing seven to nine flowers. A compost of fibrous peat, sphagnum, and broken crocks is most suitable, and abundance of water when growing should be the rule." Another cultivator remarks as follows:—"Ours are grown amongst Cattleyas, but it succeeds if managed like an ordinary cool stove plant. It is not particular as to compost, as we have it growing in peat, loam, and a mixture of both. Breaks on plants in all three kinds of compost or soils are producing a couple of spikes each. It is a free-rooting plant and requires plenty of root space. A strong plant with one or two breaks should have a 9 or 10-inch pot. When the pots are too small for the plants one spike from each break is the rule, and very seldom more than one break is produced from a lead, while under liberal treatment more spikes and breaks are common."

Potatoes—Horse Manure (J. J. K.).—The long tender sprouts on the Potatoes are of no use. Remove them, and pack the tubers, growing ends upwards, on the greenhouse bench as you propose. A light covering of moss or something of that kind, damped occasionally, would cause them to start sooner. Growth is free, yet strong, in subdued light. If the manure is from stables in which few or no Carrots are used with the dry food, and is not too advanced in decomposition through being heaped, it will be suitable for Mushrooms. A great deal is bought at a much higher price than you name by expert Mushroom growers, who find full crops profitable, but half crops would not be remunerative. It is impossible the manure can be so good after supporting a heavy yield of Mushrooms as it was before, but the residue is useful for mulching and lightening heavy soil. If your soil needs humus the fresh horse manure would probably be better than the chemicals; if rich in humus the reverse would be the case. A combination of both kinds might be better than either used alone. It is impossible to give categorical replies to such questions as yours in the absence of influencing data. Why not test the matter by experiment, and in this way get the best possible information for your own particular case?

Grafting Wax (Yorks).—There are several kinds that require to be used warm, one of the most simple being equal parts of yellow wax and rosin melted together and applied when cool enough. The following has not the inconvenience of requiring to be applied warm, and may be prepared and used without being heated:—Yellow wax 1 lb., turpentine 1 lb., Burgundy pitch 8 ozs., mutton suet 4 ozs. Mix all together and mix thoroughly, and leave them to cool. Form the mass into small balls, as it will not stick to the fingers, and use them when opportunity offers. Liquid grafting wax is a very useful application, and is, perhaps, the most convenient for the purpose of all the mastics used for covering wounds and grafting. It is of the consistency of varnish, and is applied very thinly with a brush. Care must be taken not to lay it on thickly, for the surface hardens so rapidly the alcohol is prevented evaporating. Rosin 1 lb., beef tallow 1 oz., spirits of turpentine one tablespoonful, alcohol (95 per cent.) 6 ozs. Melt the rosin over a slow fire, when melted take it off and add the beef tallow, stirring it constantly; let it cool somewhat, mix the spirits of turpentine little by little with it, and at last the alcohol in the same way. Should the alcohol be added while the mass is too hot, much will be lost by rapid evaporation; if, on the contrary, it is too cool, it will form a viscid lump, and must be slightly heated again. Stirring briskly is indispensable to mix the ingredients thoroughly. In well-corked bottles it keeps for years. If in course of time it becomes too thick, the addition of some alcohol will make it liquid again. For this purpose it must always be warmed. It is a good plan to put the bottle containing it in boiling or hot water to accomplish this.

Names of Fruits.—Notice.—We have pleasure in naming good typical fruits (when the names are discoverable) for the convenience of regular subscribers, who are the growers of such fruit, and not collectors of specimens from non-subscribers. This latter procedure is wholly irregular, and we trust that none of our readers will allow themselves to be made the mediums in infringing our rules. Special attention is directed to the following decision, the object of which is to discourage the growth of inferior and promote the culture of superior varieties. In consequence of the large number of worthless Apples and Pears sent to this office to be named, it has been decided to name only specimens and varieties of approved merit, and to reject the inferior, which are not worth sending or growing. The names and addresses of senders of fruit to be named must in all cases be enclosed with the specimens, whether letters referring to the fruit are sent by post or not. The names are not necessarily required for publication, initials sufficing for that. Only six specimens can be named at once, and any beyond that number cannot be preserved. They should be sent on the first indication of change towards ripening. Dessert Pears cannot be named in a hard green state. (W. Lowther).—1, Dutch Mignonne; 2, Court Pendu Plat.

Names of Plants.—We only undertake to name species of plants, not varieties that have originated from seed and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in firm boxes. Slightly damp moss, soft green grass or leaves form the best packing, dry wool the worst. Not more than six specimens can be named at once, and the numbers should be visible without untying the ligatures, it being often difficult to separate them when the paper is damp.

(J. T.).—1, *Adiantum scutum*; 2, a *Davallia*; 3, send when in flower; 4, *Polystichum aculeatum*; 5, *Adiantum formosum*; 6, *A. amabile*. These names are approximate, the specimens having arrived in a very unsatisfactory condition. (B. D.).—The *Primulas* are florists' flowers which we do not undertake to name. (Lincoln).—*Jasminum Sambac* flore-pleno. (L. M.).—*Impatiens Hawkeri*. (X. Y. Z.).—*Echeveria retusa*. (Amateur).—*Freesia refracta alba*.

COVENT GARDEN MARKET.—JANUARY 24TH.

BUSINESS still quiet, with supplies falling off.

FRUIT.

			s.	d.	s.	d.				s.	d.	s.	d.		
Apples, per bushel	2	6	to	9	0	Peaches, per doz.	..	..	0	0	to	0	0
Cobs	40	0		42	6	Plums, per half sieve	..	..	0	0		0	0
Grapes per lb.	0	6		2	0	St. Michael Pines, each	..	..	2	0		6	0
Lemons, case	10	0		15	0								

VEGETABLES.

		s.	d.		s.	d.			s.	d.		s.	d.
Beans, Kidney, per lb.	..	1	0	to	1	6	Mustard and Cress, punnet		0	2	to	0	0
Beet, Red, dozen ..	..	1	0		0	0	Onions, bushel .. ..	..	3	6		4	0
Carrots, bunch ..	..	0	3		0	4	Parsley, dozen bunches ..	..	2	0		3	0
Cauliflowers, dozen ..	..	2	0		3	0	Parsnips, dozen .. ..	..	1	0		0	0
Celery, bundle ..	..	1	0		1	3	Potatoes, per cwt. .. ..	..	2	0		4	6
Coleworts, dozen bunches		2	0		4	0	Salsafy, bundle .. ..	..	1	0		1	5
Cucumbers, dozen ..	..	2	0		5	0	Scorzonera, bundle .. ..	..	1	6		0	6
Endive, dozen ..	..	1	3		1	6	Seakale, per basket .. ..	..	1	3		1	6
Herbs, bunch ..	..	0	3		0	0	Shallots, per lb. .. ..	..	0	3		0	0
Leeks, bunch ..	..	0	2		0	0	Spinach, bushel .. ..	..	8	0		0	0
Lettuce, dozen ..	..	0	9		1	0	Tomatoes, per lb. .. ..	..	0	3		0	7
Mushrooms, punnet ..	..	0	9		1	0	Turnips, bunch .. ..	..	0	3		0	0

AVERAGE WHOLESALE PRICES.—OUT FLOWERS.

Orchid Blooms in variety.						s.	d.	s.	d.		s.	d.	s.	d.
Arum Lilies, 12 blooms ..	4	0	to	6	0	Orchids, per dozen blooms	3	0	to	12	0			
Azalea, dozen sprays..	0	9		1	0	Pelargoniums, 12 bunches	6	0		12	0			
Bouvardias, bunch ..	0	6		1	0	Pelargoniums, scarlet, doz.								
Camellias, dozen blooms ..	0	9		2	0	bunches	4	0		9	0			
Carnations, 12 blooms ..	2	0		4	0	Poinsettia, doz. blooms ..	4	0		8	0			
Chrysanthemums, dozen						Primula (double), dozen								
bunches	2	0		6	0	sprays	0	6		1	0			
Chrysanthemums, dozen						Pyrethrum, dozen bunches	2	0		4	0			
blooms	1	0		4	0	Roses (indoor), dozen ..	1	0		2	0			
Eucharis, dozen	4	0		6	0	„ Tea, white, dozen ..	1	0		3	0			
Gardenias, per dozen ..	4	0		6	0	„ Yellow, dozen ..	2	0		4	0			
Hyacinths, dozen spikes ..	3	0		5	0	Roses, Safrano (French),								
Hyacinth, Roman, dozen						per dozen	1	6		3	0			
sprays	0	6		0	9	Roses, Safrano (French),								
Lilac (French) per bunch	3	6		6	0	per 100	6	0		10	0			
Lilies of the Valley, dozen						Roses, Safrano (English),								
sprays	0	9		2	0	per dozen	2	0		3	0			
Lilium longiflorum, per						Roses, Maréchal Neil, per								
dozen.. .. .	6	0		12	0	dozen	3	0		6	0			
Maidenhair Fern, dozen						Tuberose, 12 blooms..	0	4		0	6			
bunches	4	0		6	0	Tulips, dozen blooms ..	0	9		2	0			
Marguerites, 12 bunches ..	2	0		4	0	Violets, Parme (French),								
Mignonette, 12 bunches ..	3	0		6	0	per bunch.. .. .	3	0		5	0			
Narciss, Yellow (French),						Violets, Ozar (French), per								
dozen bunches.. .. .	2	0		4	0	bunch	2	6		3	0			
Narciss, White (French),						Violets (English), dozen								
dozen bunches.. .. .	2	0		4	0	bunches	1	6		2	0			

PLANTS IN POTS.

	s.	d.	s.	d.		s.	d.	s.	d.	
Arbor Vitæ (golden) dozen	6	0	to	12	0	Foliage plants, var., each..	2	0	to 10	0
Aspidistra, per dozen ..	18	0	36	0	Hyacinths, per dozen ..	6	0	9	0	
Aspidistra, specimen plant	5	0	10	6	Hyacinth, Roman, dozen					
Azaleas, per dozen	24	0	42	0	pots	9	0	12	0	
Chrysanthemums, per doz.	4	0	9	0	Lilium Harrissi, per dozen	12	0	24	0	
Dracæna terminalis, per					Lycopodiums, per dozen ..	3	0	4	0	
dozen	18	0	42	0	Marguerite Daisy, dozen ..	6	0	12	0	
Dracæna viridis, dozen ..	9	0	24	0	Mignonette, per doz... ..	6	0	9	0	
Ericas, per dozen	9	0	24	0	Myrtles, dozen	6	0	9	0	
Euonymus, var., dozen ..	6	0	18	0	Palms, in var., each	1	0	15	0	
Evergreens, in var., dozen	6	0	24	0	„ (specimens)	21	0	£3	0	
Ferns, in variety, dozen ..	4	0	18	0	Poinsettia, per dozen	12	0	15	0	
Ferns (small), per hundred	4	0	6	0	Solanums, per dozen	9	0	12	0	
Ficus elastica, each	1	0	7	6	Tulips, per dozen	6	0	9	0	



THE TURN OF THE TIDE.

YES, it has come! The ever-increasing importation of foreign farm produce, which comes to our shores like a flowing tide, has at length been arrested, a check has been given in many things to positive increase, in others there is a notable reduction, and it is worth while making some inquiry as to what is possible to promote home supply and home trade in

view of successful competition in our own markets with the foreign producer.

Are we taking full advantage of cheap foreign corn? It would certainly appear that we are trying to do so. The foreign pig trade is practically dead, grinding Barley came to us in larger quantities than ever, yet with plenty of cheap food the high price of home-bred pigs was well sustained. In our article last week on fattening poultry we clearly indicated the possibility of an enormous extension of that trade, and cheap foreign Barley might well come into it with advantage. Why not, indeed? The use of ground Oats for fattening poultry and pigs in Sussex is a mere outcome of local custom and nothing else. Bring the two meals to the test of analysis, and there is practically no difference. In barleymeal we have of albuminoids 14.0, of carbo-hydrates 63.0; in oatmeal, albuminoids 12.7, and carbo-hydrates 62.0. In Kent and East Anglia there are plenty of farmers who have never heard of using ground Oats for fattening pigs or poultry. Sharps—a kind of coarse meal, or rather fine bran—is used for store pigs; for fattening barleymeal is always used. Oats or Barley then, it matters not which, either or both in mixture; the point is cheap corn, and if foreign farmers can supply us with it at cheaper rates than we can produce it, let us use it by all means to our advantage.

There can be no doubt about a general preference for home produce when it can be had. The best Wiltshire and Waterford bacon commands the highest price in the London market, and is sold exclusively by the leading metropolitan provision merchants. Surrey and Sussex chickens have special market quotations and special prices. Dorset butter is held in high repute. The gradation in the price of eggs is equally remarkable, the best foreign eggs being now sold at 1s. 6d. per dozen, Irish eggs at 1s. 9d., and English eggs at 2s. per dozen. At Christmas we saw new-laid eggs priced at 3s. a dozen. Last year there was a falling off of one and a-half million cwts. of bacon and hams from the highest consignments imported in former years. This may be only momentary, the special method of curing Wiltshire bacon being as well understood in the colonies as it is in Wiltshire itself; but it is certainly an incentive to try hard for a large increase in the amount of the best home-cured bacon this year. Another and more general incentive to action is the fact that for imports of farm produce last year we paid £7,371,861 less than in 1892, and £10,109,567 less than in 1891. Generally this saving was due to a reduction in bulk, yet it must not be forgotten that last year importations of frozen mutton, butter, condensed milk, Barley, and vegetables were higher than they have ever been, and though we had less foreign eggs than in 1892, the number was greatly in excess of that of 1891. The cost to the country for foreign eggs last year was £3,875,639.

Surely with corn so cheap we ought to produce more eggs, more poultry, bacon, hams, and lard. When corn was high in price most of the land was devoted to its cultivation, now that Wheat has fallen never to rise again, except in case of war, farming of a more mixed character has become possible and desirable. Let us produce more and more of all the produce which comes under the comprehensive scope of dairy farming, more fruit and vegetables, paying less heed to instances of failure, through some farmers having a glut of Potatoes, or others not being able to sell their inferior Apples at a profit. For produce of the best, and only of the best, there is always a fair market. To obtain such produce there must be close attention to detail, a thorough comprehension of every point of practice, an awakening from mere sluggish habit and custom to intelligent observance of that which is essential in breeding and rearing, in soil tillage, planting, and sowing. A noble band of pioneers is doing this already, to the profit of every member of it, and for the benefit of the entire community.

To it is the turning of the tide due. Its members are not in any particular district, but are scattered about throughout the length and breadth of the land. They spend largely on manure and labour; they gather abundantly too, and we intend in other articles to tell something of their practice and its results.

WORK ON THE HOME FARM.

In "Poultry" of January 12th a correspondent says, "At the present time from twenty pullets, April hatched, I am getting from forty-five to fifty eggs per week; and why? because I give them soft hot food—i.e., hot with fire, and also with cayenne—on these cold frosty mornings." We hope this quotation in support of our advice will induce particular attention to the selection of plenty of spring birds for winter eggs this season. The best plan is to have them in two batches—the first from March hatchings, to come into laying in September or early in October, when the old hens are moulting. Many of the March pullets only continue laying for a short time, and then moult; the April birds follow, and keep up the supply. This is a seasonable hint, as February will soon be here, and bearing in mind that the eggs are three weeks in incubation arrangements must be made forthwith if you would have plenty of new-laid eggs next winter. We cordially recommend all our readers who are able to try it to do so, and can assure them there is really nothing speculative about it. It is just a question of painstaking effort. Pray do not forget to allow a wide margin for failure of eggs, losses among the chickens, weak birds, and cockerels. Better have some to eat or sell than not enough to select from.

Make every effort to keep up condition among store cattle. In a winter of such general scarcity of food high prices are a temptation to sell hay, straw, and roots. Happy is the man who has a stack or two of prime hay to spare. We recently made an inspection of a home farm where there were six hayricks—one in cut, and the other five, at a moderate computation, were worth £1000, probably £300 or £400 more. There were ample stores also of home-grown corn and roots for 200 head of cows, and store cattle in the enjoyment of such perfect shelter and judicious management as we seldom meet with. Mixed food consisting of chaffed hay, sliced roots, and crushed corn was in use. In a case of such exceptional abundance the use of hay was justifiable. Most farmers think themselves fortunate if they have plenty of straw this winter.

OUR LETTER BOX.

Pickle for Hams (Novice).—Yes, bruise the shallots and chop fine the suet. Cold water answers perfectly. Turn the hams frequently in the pickle. When taken out of the pickle at the end of the month put each ham in a stout paper bag before sending it to be smoked. Sawdust or wood used for the chimney or smoking room should be of oak, beech, or similar wood, avoiding pine or fir wood and such sawdust.

METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

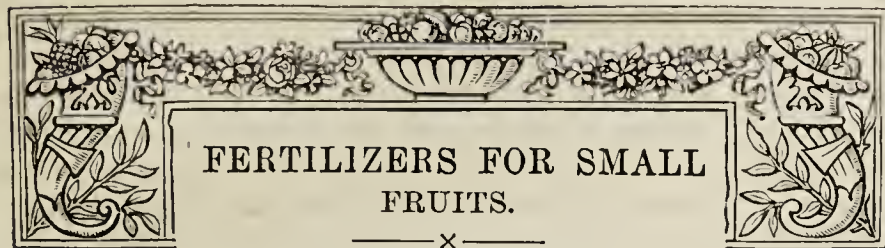
Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude, 111 feet.

DATE.		9 A.M.					IN THE DAY.				Rain.
1894. January.		Barometer at 32° and Sea Level.	Hygrometer.		Direc- tion of Wind.	Temp. of soil at 1 foot.	Shade Tem- perature.		Radiation Temperature		
			Dry.	Wet.			Max.	Min.	In Sun.	On Grass.	
		Inchs.	deg.	deg.		deg.	deg.	deg.	deg.	deg.	Inchs.
Sunday	.. 14	29.811	41.8	41.8	N.E.	39.3	44.9	41.4	44.9	37.0	0.296
Monday	.. 15	30.076	38.4	38.1	W.	39.9	47.0	37.8	62.1	33.9	0.135
Tuesday	.. 16	29.904	44.8	44.2	W.	40.2	50.7	38.1	66.9	34.7	0.010
Wednesday	17	29.660	49.9	48.9	S.	41.9	51.8	44.4	56.6	41.9	0.118
Thursday	.. 18	29.498	44.9	43.9	W.	42.2	49.1	43.4	73.9	35.0	—
Friday	.. 19	29.963	40.2	39.5	W.	41.7	49.7	36.1	67.6	33.0	0.110
Saturday	.. 20	29.591	47.8	44.9	S.W.	42.1	49.6	4.1	73.0	36.6	0.046
		29.786	44.0	43.0		41.0	49.0	40.2	63.6	36.4	0.715

REMARKS.

- 14th.—Gloomy all day; heavy rain from 8 A.M. to 11 A.M., and drizzle all morning; rain again at night.
 15th.—Rain till 3 A.M.; bright sun from 8.30 till 10 A.M., then cloudy to 1 P.M., but generally sunny in afternoon; clouded over at 6 P.M. followed by showers, and heavy rain from 8.15 P.M. to 10 P.M.
 16th.—Fine and generally sunny in morning; overcast and damp in afternoon and evening.
 17th.—Dull and damp early; showers about 9.45 A.M., overcast morning; bright sun at 1.30 P.M.; steady rain from 2.30 P.M. to 5.30 P.M.; fine evening. Lunar halo from 6 P.M. to midnight.
 18th.—Fine and generally sunny till 2.30 P.M., slight showers from 3 P.M. to 3.30 P.M., almost cloudless again by 4.30 P.M.; fine evening.
 19th.—Fine and generally sunny in morning; overcast afternoon and evening, with occasional drizzle.
 20th.—Raining in small hours; fair after 7 A.M., bright sun from 10 A.M. to nearly noon, heavy shower at 0.20 P.M., then generally overcast.

A warm, dull, damp week —G. J. SYMONS.



FERTILIZERS FOR SMALL FRUITS.

THE extent of acreage under small fruits has been quadrupled during the past ten years. This is in a great measure due to the essential manurial elements being obtainable at a low price in the shape of commercial fertilizers. There is no question at all as to the great advantages to the fruit grower of having efficient fertilizers placed within his reach. Formerly his plantations were limited by the supply of manure, and his only hope of enlargement was by increasing the output. Some persons, however, enlarged their plantations, and had no regard to the maintenance of the soil's fertility. Those soon found out that their ventures were unprofitable, and the panacea offered the farmer to help him out of the slough of depression and set him on a firm footing mere delusion. Where was the manure to come from if every acre of small fruit plantation required 20 to 40 tons of farmyard manure annually, or if artificial fertilizers were used every third year? His only hope of engaging in small fruit culture was by increasing the number of his stock, thus compelling him to unite his two lines of industry. This in many cases was practically impossible, for with land already requiring more manure than could be manufactured on the spot to maintain it in condition, and render the cultivation of crops profitable, what was the good of engaging in a pursuit calculated to impoverish the farm?

But some persons saw a way to unite both lines of industry without derogation to the condition of the land under whichever crop it might be. These took advantage of the fact that the elements contained in farmyard, stable, or town manure could be obtained at a low price in the shape of commercial fertilizers, and their engaging in fruit growing were only limited by the amount of the land and by the capital at their disposal, for they could easily procure every needed element of fertility. The outcome has been eminently satisfactory in most cases, some cultivating as many acres of small fruits as they formerly had under cereal crops, while not a few persons have fruit farms quite as large as their purely agricultural land extended previously. This has been rendered practicable only by the liberal use of commercial fertilizers. It must, however, be distinctly understood that not one of these successful cultivators places a low estimate on stable, farmyard, or town manure, nor would they have anyone dispense with solid manure altogether. But the consensus of evidence from them is to use only enough stable, farmyard, or town manure to insure the vegetable tilth or humus, and supplement it with concentrated fertilizers. They advocate this course on the score of economy, being firmly convinced of the waste in buying and carting manure several miles to get only 25 lbs. of actual plant food to the ton. That is all the plant food there is in 2240 lbs. (1 ton) of manure, the remaining 2215 lbs. being silicates and organic matter of no special benefit to the crop in the year of application beyond that of humus. The cost of 20 tons of farmyard manure is much more than that of 2240 lbs. of fertilizers, and the latter are conveyed to the land, and crops at a twentieth of the cost for carriage. Such experience is doubly interesting, from the fact that most farmers, and gardeners for that matter, were sceptics formerly on the use of commercial fertilizers, they having previously held that there was nothing equal to stable or farmyard manure.

The three principal elements in farmyard manure are phos-

phoric acid, potash, and nitrogen. These can be separately purchased, the first in bone superphosphate, and is sold at about £5 10s. per ton, with a guarantee of 2½ to 3 per cent. of ammonia and 30 to 35 per cent. of phosphate; the second in kainit, which costs about £2 to £2 10s. per ton, with a guarantee of 24 to 26 per cent. of potash; and the third in sulphate of ammonia, or in nitrate of soda, the latter of which is now to be had at about £8 per ton, with a guarantee of not less than 95 per cent. of pure nitrate, and contains about 16 per cent. of nitrogen. A ton of farmyard manure rarely contains more than 10 to 12 lbs. of this valuable substance—nitrogen, and it is the most costly ingredient of artificial fertilizers. Farmyard manure is about three-fourths water, and contains about 500 lbs. of organic matter, with from 55 to 65 lbs. of ash. The nitrogen of farmyard manure has to undergo a gradual change into nitric acid and nitrates before it can be taken up by plants. This applies to all the nitrogen contained in the decaying organic matter in soils or in manures. Nitrogen is of no use whatever in the soil until it is converted into nitric acid or nitrates, and how much of this in the shape of ammonia is evaporated, or that carried off by rains as nitrates, nobody knows. M. Ville says the loss is immense in farmyard manure during its conversion into food for plants. Therefore it may be said that the only element of direct value as plant food in farmyard manure is for the most part lost to the crops.

Chemists, however, are apt to overlook the importance of the warmth imparted to the soil and the moisture evolved for the benefit of the plants during the conversion of the organic matter into ammonia, and the heat that must accompany the nitric ferment cannot but benefit the plants. This, in my experience, gives an immense advantage over artificial fertilizers, and is one of the reasons why it is undesirable to entirely dispense with stable, farmyard, or town manure, or such substances as waste from furriers, rags, and shoddy. A grower, however, insists that farmyard manure may be altogether dispensed with for small fruits, as it certainly is in orchard culture. This is not a new doctrine, and is had advantage of by most growers without knowing it. He says, "It is all very well to describe gardens and fruit plantations without weeds. They are difficult to keep down in mine. They will get rank before autumn—that is, the annual weeds, and it is a capital thing too, for by turning them under, the land is furnished with the same kind of organic matter that I should otherwise have to buy, and is contained in stable manure." This was a puzzle. No manure—all the organic matter the small fruit plantation needed in the fifteen years of its existence for supplying humus was supplied by the weeds that could not be kept down by hoeing. There was not a perennial weed of any kind in this plantation, yet the annual ones got ahead, particularly in wet seasons, and were turned under once a year with the result that no solid manure was required.

What small fruits require and get from the soil are nitrogen, phosphoric acid, and potash. It is necessary to have a goodly store of the two last in the soil, or the nitrate of soda or sulphate of ammonia will do little good, for the power of nitrogen is in proportion to the amounts of phosphoric acid and potash available as food when it is applied in a form fitted for taking up by the roots, and at once combining with those substances to push ahead and build up the structures of the plant—the growth, leaves, and fruit. In fact, there is nothing like nitrogen for berries—making fruit swell, to fill the baskets sooner.

I suppose everybody knows that small fruit bushes produce an amazing number of tiny fibres early in the spring. Persons digging late—after the buds commence swelling—must have seen the small roots permeating the soil in all directions, and have noted how clean and healthy they look as compared with the old roots. Of course they take the hint, and point the ground over sooner another year, for who can but see in these hair-like roots the foragers for the coming crop? They learn something more—that

for these mouths to fill properly, to draw up nourishment from the soil, it must be there if the berries are to be well nurtured and become large. What is there in spring will depend on that which has been applied to the soil previously, and what these roots want first of all is phosphoric acid, then potash—or better, the two together. Of course, our friend—the manurer of the ground with weeds, who often sows Mustard or Rape after the berries are plucked to get something to turn under—has the weeds under and in process of conversion into manurial matter, for there is nothing like fermenting material for promoting speedy and abundant root formation; but he has something equally important ready for them—to wit, phosphoric acid and potash, and says, “that is our weed manurer—soda.” He avows that soda is nearly as good, and in some cases better, for berries than potash. It means that kainit is cheaper than sulphate of potash, also that the grower knows well enough that kainit contains both potash and soda, so he is sure to be right. Bush fruits generally require one as soon as the other. This is very marked in Strawberries. If the soil contain soda liberally the ash reveals a large percentage of soda has entered into the composition of the fruit, and it is the same as regards potash, these substances being interchangeable. But our friend misses a point or two. He does not see that hydrochloric acid is one result of the kainit application, and this dissolves silica, so that the berry trees build up their structures solidly, and do not topple over, as they certainly otherwise would from the heavy dressing of nitrate of soda, and it is got into the berries instead of growth beyond what is needed for future bearing.

To supply the roots with phosphoric acid and potash (I do not set much value on soda or salt in any but light and dry soils for small or any fruits, for the soil, except in some inland places, contains enough), superphosphate and kainit should be given before the ground is pointed over in the winter, spreading them over the ground beneath the bushes, and 1 foot further than the branches cover, at the rate of 1½ lb. each per rod. The best plan is to mix the bone superphosphate and kainit together, and use 3½ lbs. of the mixture per rod and point it in, not forgetting to bury the weeds and cleanse the ground of perennial ones. This can be done very well without injuring the roots, and one grand point gained is a good tilth of fine soil in the spring, which is one of the very best preservers of the soil’s moisture, and has no equal in catching night dews. Thus drought is in a great measure defied, and it is moisture the roots want to draw in with its sustaining food.

Just a word for those sceptical persons who frequently assert that the ammonia of the superphosphate will be washed nobody knows where by the spring, and the phosphates swept beyond reach of the roots. Allow me to assure them that the soil only likes to get the chance of holding phosphoric acid, and the clay has a strong affinity for ammonia. Put these substances into the soil in the winter, and then see if the bushes will not produce deep green coloured leaves in the spring. As for kainit, the soil holds potash indefinitely, and soda is not readily washed away, as everybody knows by walks sprinkled with salt long remaining damp afterwards. Besides, superphosphate and kainit are like the weeds and the stable, farmyard, or town manure, they want converting, and this is done by the time the bushes begin to put forth growth, so that everything favours the applier of these elements in the winter. If the land be open, they may be used in early spring, but before the buds begin to swell, otherwise it is better to be early rather than late with such substances as phosphates and potash.

In the spring when the buds begin to unfold supply a dressing of crushed or powdered nitrate of soda, as advised for the superphosphate and kainit mixture, but employ 2 lbs. per rod, or if the ground be naturally damp, about half a pound less. Distribute it evenly, and leave the rains to do the rest. If the trees are vigorous and there is any doubt about a full crop setting it may be well to

wait until the crop is assured, then apply the nitrate, for it is certain that if it is not got into the berries it will get into the wood and render it soft. This caution is very important, for unless nitrate of soda is applied in the early part of the growing season it is much better left alone as its nitrogen comes too late. But apply it at the proper time—just when the plant needs the stimulus—and when it will not be washed away before being taken up, then no ordinary amount of manure will produce so great an effect, for the reason that the plants grow and form their fruit early in the season. The nitrate of soda furnishes the plants with nitric acid before the nitrogen of manure (assuming it to be applied) can be converted into this essential ingredient of plant food. The poorer the land the more need to apply superphosphate and kainit in the autumn or early winter and point them in, and in the following spring—in fact, every spring give a dressing of nitrate of soda.

The effect of nitrate of soda on Strawberries, especially in light soils (and it has special significance for chalky, from which ammonia soon vanishes) is magical, doubling and trebling the yield. If anyone doubts this let them try a large dressing of nitrate of soda on an old Strawberry bed, first of all freeing it from weeds and grass. Sow it (powdered) broadcast early in the spring, and give another dressing a few weeks later. The effect will be to kill slugs and other predatory pests that fatten on Strawberries, and these will be fine in crop, only keep down weeds and protect the fruit from the birds. The best time to apply nitrate of soda to Strawberries is when they are commencing growth, and if more stimulus is needed supply another dressing after the fruit is well set—scatter it between the rows and plants, not on them. It is desirable to use superphosphate as well as nitrate of soda on Strawberry plantations, for the one tends to the production of fruit and the other to swell it to large and handsome proportions.

Nitrate of soda is equally as good for Raspberries as for Strawberries. The larvæ of various pests lurking and feeding on the roots of these plants, disliking nitric acid, become less troublesome in the adult stage, because there are fewer that live to it. The nitrate of soda helps the Raspberries to produce abundant crops, and sustains them in drouthy seasons. On Currants, applied on each side of the rows early in the spring, it is productive of large fine fruit, and is also effectual on Gooseberries.—G. ABBEY.

TEMPERANCE IN TEMPERATURES.

AT first sight a long stretch of imagination is required to connect temperatures with temperance, but the great drink question has nothing to do with this; yet if we accept the maxim *in toto*, “Be temperate in all things,” it must needs come within the pale. The one is a burning question for other journals—the question of burning I hope is suitable for this, and I think there are times when we are a little intemperate in this matter.

A spell of hard weather inaugurating the new year, and the effect of last year’s coal strike still with us, bring up some thoughts on the subject, not new ones certainly, and I very much fear not orthodox. It may be I am crossing the frontier on to dangerous ground, but not alone, for some have had, and do have, the same thoughts which I will endeavour to express—viz., to expatiate on the evils of those fixed temperatures in our plant stoves and forcing houses to attain which, or rather endeavouring to attain it, so severe a strain is put on men and the machinery of heating. During a spell of hard weather visions of possible breakdowns unpleasantly present themselves. It is necessarily at this inopportune time our pipes and boilers are put on their trial. It is to them what the proving of small arms in the Government office at Birmingham is to the guns—some stand the test, and some “bust;” and though perhaps in some measure we court disaster yet happily escape the calamity, fuel must ever be an important consideration, more so when high prices obtain. Could each degree of temperature obtained over the outside register be measured by so many pounds of coal up to a certain point of comfort and safety for the inmates of our tropical houses, it is obvious the consumption must be out of all proportion in trying to add on and maintain the few degrees

necessary to reach our empiric standard. The all-round strain is so great that a change to milder weather comes as a relief, though those wise old heads shake ominously, and mutter about "fat kirkyards."

Now I trust it may not be thought I am quixotic enough to run full tilt against the laws of Nature wrested from her by the mind of man for his guide—these good rules that are laid down for our guidance in the temperature of our houses. No, I am not so rash as that; but I take them as the road we are to travel on, and in doing so we can step a little to either side without getting in the ditch. Nature is very elastic in these matters, actually forgets herself so far as to give films of ice in India and crown the Tree Ferns in the gullies of their Antipodean homes with snow. She, too, admonishes us in the matter of fuel by threatening a coal strike surpassing all others in magnitude; but, as this is timed for a few millions of years hence, "Sufficient for the day is the evil thereof." We, of course, go to her for our lessons when she is in an amiable mood. No one thinks of heeding her when she is, as she sometimes is, positively savage; and we do not get up mimic cyclones or a deluge in the Orchid house because she does so entertain her protégés in the Indies. So, under some conditions, we will not have her as a guide; and, under other conditions, cognizant of her flirting propensities, we may be less anxious to copy her so close.

In large gardening establishments order must be maintained, or chaos would result; rules are laid down to be obeyed with military precision, as, of course they should. Yet does not rigid discipline exact a little too much in the case of fixed rules for certain night temperatures to be maintained, which in many cases is impossible under adverse conditions outside? And in the anxiety of the stokers to carry out the orders of the chief engineer is where the evil comes in, increased by the opening of doors through the night to see how matters go, with about the same good result as tiny gardeners in embryo, who plant one day to pull up the next for root observation. Where the houses are detached loss of heat must result. In a large range of glass with probably an entrance from the offices in the rear, this remark does not apply; here a house to house visit can be made in comfort, and if we rob Peter in one house by an open door, we pay Paul in the next.

It may be thought of little moment to think so much of a few degrees less than the ideal, not so much difference truly; but many a young gardener might justly say, "But, oh, the difference to me!" Of course, we do not want feather-bed gardeners any more than feather-bed soldiers; there is, indeed but little of that pertaining to this sentry go till 2 or 3 A.M. on the occasion of a hard frost, clinkering those purgatorial fires and watching that little tell-tale, the registering thermometer in every house, then black as Erebus seek the couch, before doing so nudge a sleepy mate who must be up in two hours to feed the insatiable furnaces. Overdrawn, I hear you say. No, reader; just a page out of my life, far back in the book now, but indelibly printed by memory—and I venture to add many another "could a tale unfold."

A valuable friend in need are blinds on tropical houses, where they can be left up through the winter, snugly housed under a coping on the roof—to be run down on urgent occasions; they are wonderful comforters, conserve heat, and prevent drip. The drawback is they may at times prove troublesome by getting frozen or weighted with snow, still I think the advantages more than compensate. Nature's laws of temperature are not empiric ones. Her children of the vegetable kingdom often have to put up with some rough treatment at their mother's hands, though they may take it better from her than they do from us. We do not venture to take such liberties, and are inclined to err on the side of coddling and petting, which the angry dame resents; and when she circumvents us, and does get a slap at them, they cannot stand it. In conclusion, should it be thought I have stepped beyond the boundary line of common sense, I can only say these few remarks have been misinterpreted, or it may be the pen has failed to express what has been ripening in my mind for some years. Older and wiser heads than mine may think temperance will not connect with temperature—the rules cannot be made elastic ones; while I respect their opinion I hold my own.—E. K., *Dublin*.

MULCHING OUTSIDE VINE BORDERS.

THICK mulchings of leaves and litter for the protection of Vine roots are still persisted in as if the latter are so tender that the slightest frost will injure them. It is surprising when practices are once established how tenaciously cultivators cling to them without considering whether they are right or wrong. Evils certainly follow the heavy mulching of Vine borders in the autumn, and

not unfrequently results in the complete ruin of the Vines if adopted for a period of years. I do not hesitate to say that the roots of Vines in outside borders left to the mercy of the weather will be in better condition in the spring than those that are protected, as it is termed, by a thick mulching. The border is certainly drier, even during the winter, and the roots remain perfectly healthy in the one case while there is a great tendency to decay in the other. Again, the roots mature naturally and a frozen condition of the border does not injure them in the least.

The roots of the Vines are equally as hardy as those of the Apple, Pear or Plum, and why, therefore, waste time in trying to protect them? For years I have discontinued these practices with beneficial results to the Vines. When the borders are exposed to frost, apart from its sweetening and pulverizing influence on the soil and the preparation of plant food by the chemical changes inaugurated by exposure, it induces the Vines to complete rest. I know of no agent that brings about such complete rest as frost. Gardeners can demonstrate this fact by the many plants they have to force from time to time. What sends to complete rest Strawberries for early forcing so well and so completely as their exposure to a good frost? The very same may be said of Lily of the Valley, Lilacs, Primroses, Rhubarb, Seakale, and many other plants and vegetables. The same is strikingly noticeable with Peaches in pots. Rest is so complete that the aid of gentle warmth afterwards excites them immediately into activity. Why should Vines be exempt from these rules? My contention is that they do not rest so thoroughly or go to rest so quickly when the roots are protected by mulchings as when they are exposed.

It may be argued that the border is not drier when exposed; that may be so, but the further objectionable practice of thatching the borders, or covering them with wood shutters or corrugated zinc to keep off autumn and winter rains must be practised. These methods of procedure are, to my mind, even more injurious than mere mulching; they are both unnecessary and unnatural. We have only to think what such treatment means, and the "rain-shooting-off" principle would be discontinued. Fancy the border and its contents for a period of four or six months being carefully protected from those atmospheric elements which are necessary for life and health. The roots are excluded from the free access of air. I have known Vines showing signs of distress, flagging, and even the foliage presenting a browned appearance by the flowering stage, solely through preventing air entering freely to the roots. Not long ago I had to discard this system of Vine border protection, and the Vines instantly began to improve.

Mulched borders hold on the surface a large amount of water that would naturally, had no mulching been present, have filtered through the soil. These mulchings left on the border during the spring only intensifies the evil, and the soil is colder than it otherwise would be with the surface exposed. The sun's heat early in the year, say February, would commence to be absorbed by the border and warm the soil, while on the mulched border the soil would remain cold for months, the heat of the sun being used to evaporate the moisture held by the mulching material. The length of time required to accomplish this task will vary according to the weather and the thickness of the mulching. I was called upon to look at some Vines in two different gardens last May, and in both cases the borders outside were heavily mulched. The soil in the garden was dry on the surface, perfectly sweet, and warm—in fact, in such a condition as would encourage luxuriant growth. The Vine borders were just the opposite, the mulching material saturated, the surface soil wet, cold, and practically sour. The border in one case was nearly a new one, and brought into this condition by heavy annual mulchings. I had not the means of testing the temperature of the ground and that of the Vine border at a certain depth; but the difference was very marked—the one warm, and the other perfectly cold. How could Vines under such methods of culture be expected to flourish? When would the roots commence activity in cold borders which were sealed against the admission of air? Too many Vine borders are subjected to this treatment, which result in poor Grapes, shanking, and other diseases to which Vines are subject. In passing, I sound a note also against the heavy autumn mulching of wall and other fruit trees.

Vine and fruit borders can be mulched early in the season, and beneficial results follow. I do not object, and have known no evil results from a thin scattering of nearly fresh manure spread on Vine borders during the autumn and winter. It is acted upon by the weather and its manurial properties carried down to the roots. When borders are mulched, say during February, the material should be of a strawy nature. This ought to be drawn to the base of the border on warm mornings by the aid of a rake, so that air can have free access and the sun's heat every chance of warming the soil. Before evening, or directly the sun is off the border, the litter should be again spread over the surface, which will prevent the radiation of heat at night, which if left exposed would naturally cool to a certain extent. It is surprising how rapidly a boy can cover and uncover a number of borders. It is well spent time; the roots start earlier than they would do if the border was left fully exposed to natural conditions.

Borders in the wet cold condition pointed out should in early February be uncovered, the surface pricked up, the depth being decided according to the depth of the roots, and then left exposed to sweeten and warm. Borders in a bad condition will often need the drying influences of a season before they are in a suitable condition for healthy root development.—WM. BARDNEY.

FERNS ON WALLS.

No matter how well plants may be grown or tastefully arranged, they will do no one full credit if the background and surroundings are bare whitewashed walls. One frequently notices inquiries for plants that will thrive on dark shady walls in greenhouses and conservatories; but there are few of the usual creepers and pillar plants that will prove satisfactory for any length of time in such situations, especially, as is often the case, when they are overhung with creepers from the roof. *Asparagus plumosus* does admirably for the purpose if planted in a well-prepared border in an intermediate house. *Ficus repens* is suited for a cool house; but if the wall is lofty it develops into the major form and loses its close clinging character.

Unightly walls can often be made the most useful and picturesque objects in the house by means of virgin cork and a careful selection of Ferns. Ferns for cutting are required in great abundance in most places, and when grown on walls the fronds are far more durable, in consequence of their getting more light and air than when cultivated in pots at a great distance from the glass. Previous to nailing the cork on the walls the kind of Ferns intended to be grown should be decided upon, so as to make adequate provision for their continued growth. *Davallias* are well adapted for this mode of culture, and are never more at home than when growing on corked walls. They will thrive with less soil than most Ferns, hence only small pockets need be made for them as starting points. When covering the wall with cork for these Ferns a good layer of clean sphagnum moss should be placed between the wall and cork and the pieces of former must not be fitted too closely, but allow the moss to fill up the interstices. This will be found useful to peg the rhizomes into, and they will root into the sphagnum and derive moisture and support from it. Unless the house can be kept close and a moist atmosphere maintained until the plants begin to grow it is best to establish them either in small pots or moss before planting them on the walls.

Each pocket for the *Davallias* should hold about one pint of compost of two parts half-decayed leaf mould or peat and one part each of silver sand and light fibrous loam with a little chopped sphagnum and charcoal. Of course the closer the pockets are together the quicker the wall will be covered, but a good distance to arrange them is from 12 inches to 15 inches asunder, and previous to planting they must be well drained with potsherds in the same way as for pot culture. In selecting the varieties due regard must be paid to the minimum temperature of the house, as many species of *Davallia* will not thrive in a cold house, but most of the greenhouse species will luxuriate in the hothouse. In a warm conservatory, where the temperature does not fall below 40° in winter, we find the following kinds thrive on walls:—*Davallia dissecta*, *D. dissecta elegans*, *D. decora*, *D. bullata*, *D. canariensis*, *D. Tyermani*, *D. Griffithiana* and *D. novæ-zealandiæ*. The first-named is by far the best for covering the wall quickly, but *D. bullata*, being deciduous, should be used sparingly. For covering walls in a temperature lower than 40° but above 32°, *Drynaria pustulata* is unique and may be treated as advised for *Davallia*. In its young state the fronds are undivided, but as it becomes established it throws out deeply pinnatifid fronds and will quickly cover a wall with a mass of rich dark green. It will thrive in a dense shade, but the fronds are of little value for cutting purposes.

The elegant and useful Maidenhair Ferns may also be grown on walls and pillars, but being for the most part stationary the sphagnum can be omitted between the wall and cork, although even these would be materially benefited by its use, owing to its property of holding and giving off moisture. For these, and all other Ferns that do not send out and root from rhizomes, larger pockets must be provided, and adequate means be secured for supplying them with water; but these must vary to meet the constitutional requirements of the plants, for if we put a weak growing variety in a large pocket failure and disappointment will follow. *Adiantum cuneatum*, when grown towards the top of the wall, assumes that rigid texture, pale green colour, small pinnæ, and compact frond so much appreciated by ladies, and which indicates its lasting properties in a cut state. A beautiful effect is produced by covering a wall with cork and arranging pockets to hold from 2 to 3 pints of compost at 18 inches asunder, and planting them with strong plants of *Adiantum cuneatum* with other varieties of medium growth; also an equal number of small pockets arranged between them and planted with *Davallias*. *Adiantum assimile* is well adapted for this mode of culture, for which the space between the wall and cork should be filled with sphagnum or peat, as its rhizomes travel behind the cork, and the fronds are produced from every crevice. This is also one of the

most beautiful Ferns for baskets, as it completely covers the bottom, sides, and top. *Adiantum gracillimum* never shows to such advantage as when grown in large pockets on a corked wall; its beautiful fine fronds fall over the edges of the pockets, and are thus prevented becoming entangled with each other as when grown in pots.

A good finish is given to the wall by forming a trough 18 inches from the top by fixing 11-inch boards at an angle of 45°. Cover the boards with cork on the outside and along the top edge previous to fixing. They are easily fixed by driving spike nails about three parts of their length into the wall, and 3 feet asunder. The lower edge of the board rests on these spikes, and the top edge is secured to the wall at the proper angle by means of hoop iron, with two holes punched at each end, and bent at sufficient angles to allow of its being nailed to the wall and over the top edge of the board. The trough must be well drained, and should be filled to within 2 inches of the top with three parts fibrous loam of medium texture, and one part sand. All the *Adiantums* and *Pterises* of moderate growth may be planted in these troughs, and they will produce fronds of unusually stout texture and great endurance. It is surprising the amount of direct sunshine and exposure these Ferns will bear, and even enjoy, when grown near the glass in this manner, and in the soil recommended; but if much leaf mould or peat be used they will not thrive in this position, the growth being too thin and flimsy. More could be written in favour of this delightful way of growing Ferns, but enough has been said to suggest to the ingenious how best to transform the unsightly into the beautiful.—J. H. W., *Leicester*.

GARDEN WALKS AND EDGINGS.

IN many gardens those great aids to comfort and convenience—to say nothing of appearance—good walks, are the exception, not the rule. More particularly is this the case in kitchen gardens, where one much too frequently can see crooked, ragged, and gappy edgings feebly defining moss-grown, weedy, and untidy walks, the latter unpleasant to the foot, and both unsightly to view.

No matter how highly cultivated and luxuriant the crops may appear to be, the whole effect is marred if they are surrounded or margined by faulty walks and edgings. Nothing seems to compensate for inattention to and neglect of these important adjuncts to a garden. Various kinds of edgings are used for walks. Box used to be almost universally employed for this purpose, and is now to some extent; where it does well, and time and attention can be given to keep it in good order by annually clipping and periodically relaying it, not much can be said against its use beyond the fact that it is impossible to apply any of those labour-saving aids, weed destroyers, in anything like close proximity to it. Salt, which some still use on walks to destroy weeds and moss, is equally detrimental to its well-being.

Where Box edgings have become overgrown and neglected, affording a fine harbour for snails and slugs, they ought, on the first favourable opportunity, to be taken up and relaid, or, perhaps better still, burnt. The condition in which Box edgings are seen in some instances makes one sigh for a well-conducted fire. I hold the opinion that Box is not a good edging for kitchen garden walks, for reasons that may be gathered from what I have above stated. I discarded it many years ago, substituting, as an edging, a locally quarried stone, similar to, but rather thicker than the "tile" stones used for roofing dwellings in many parts of the country.

These stones are roughly squared, and dressed on the upper side with a mason's hammer, and the ground having been levelled and lined out, stakes or pegs placed at proper distances, and at the exact height required for the edging above ground, the stones can be put in with accuracy, inserting them sufficiently deep to give the requisite firmness, and prevent upheaval by frost. Two handy labourers will put in many yards of this edging in a day, and, when thoroughly well done and rammed firm, no better can be desired; moreover, it is one that will give no further trouble, ordinary care being taken when digging not to disturb or loosen the stones. Having put in, from first to last, more than a mile in length of such edging, I find the saving of labour, as contrasted with the keeping of Box, grass, and other edgings in condition, very considerable indeed, and the neat and tidy appearance attract the most ordinary observer.

Glazed earthenware tiles are much used in small gardens, but by some persons are objected to on account of the formal appearance they present when used in long lines, otherwise they are most suitable and clean, affording no harbour for slugs. But where a "dead edging," as some term it, is objected to for the principal walks, Box had better be used. Some use the common white Pink as an edging; it looks well and the flowers are useful for cutting. Parsley makes

a fair line, and is, of course, useful, but should be of a select strain. The compact-growing Pansies of the Blue King type make an excellent line, and during the greater part of the year are very showy. Strawberries are used for the purpose by some, and, where economy of space has to be considered, may answer fairly well. But all the above-mentioned are more or less open to objection on the score of the labour entailed in keeping them in good condition, and they cannot by any means be termed permanent edgings.

Not in all localities can good gravel be procured, but where it can be had at a moderate cost no excuse for having bad walks can exist. Broken stones, clinkers, and brickbats for giving the requisite thickness and drainage to roads and walks can in most places be extensively supplied; and a finer material, gravel preferably, can usually be found for solidifying the whole and smoothing the surface, which can be kept hard and firm by the frequent application of the garden roller, and free from weeds and moss by the occasional application of an approved "weed killer," of which there are many reliable kinds in the market. Weeding or hoeing garden walks is, or ought to be, a thing of the past. No better provision for the retention and germination of every seed wafted about can be imagined than the carefully raked loose surface presented by some garden walks, which is unpleasantly dusty in dry weather, and very dirty in wet.

In all large kitchen gardens a great saving of labour can be effected by having the walks sufficiently wide to allow manure and soil to be carted to the different quarters. During frosty weather no harm can be done, nor can there be during dry days at any season of the year, if the walks are well made and kept firm. I think it is a mistake to place, as many do, pots of Strawberries, Chrysanthemums, and other plants on the sides of walks during the summer and autumn months. However suitable the position may be for these important plants, the walks are not at all improved in condition by the pots remaining upon them for any length of time, and which is only too apparent when, on the approach of winter, the plants are being housed. A space or plot of ground, as close to the water supply as possible, can in most places be given up to such plants in pots, where their wants and cultivation can be attended to equally as well, and probably better than when placed on the sides of paths and walks. In fact, whatever attention and care that can be bestowed upon these indispensable parts of a garden are given will be amply compensated for in the generally enhanced appearance of the place, and the increased ease and expedition with which all operations connected with it can be performed.—W. N., *Budminton*.



A NEW ORCHID BOOK.

A NEW work on Orchids is expected ready during this month from the pen of Mr. H. A. Burberry, grower to the Right Hon. Joseph Chamberlain, M.P., entitled "The Amateur Orchid Grower's Guide Book."

SACCOLABIUM CÆLESTE.

THIS charming *Saccolabium* was introduced a few years ago, but as far as my experience goes it is not so generally cultivated as it ought to be. It is, I find, rather slow in growth, which perhaps may account for its exclusion from many collections. Nevertheless it is an attractive Orchid, as may be readily imagined by the following description, which appeared some time since in the "Orchid Album." The author there says:—

"*Saccolabium cæleste* is a lovely species, evergreen, and compact in growth, with foliage 6 inches long. The plant attains to a foot or more in height, and is slow in growing to this size. The inflorescence proceeds from the axils of the leaves on either side of the stem, and the spike is erect, some 6 or 9 inches in height, the raceme being dense. The blunt cuneate-oblong sepals and petals are tipped with sky-blue, and the compressed blunt recurved spur has a blue tint on both sides of the centre; the interior part is also sky-blue, while two falcate, subulate bodies rise from the apex inside the spur. The blooming season is July and August, and the plant continues in full beauty between three and four weeks, if kept in a fairly warm house and the flowers shielded from the effects of damp.

"This plant requires the temperature of the East India house

to maintain it in proper condition, and should be grown in sphagnum moss, with ample drainage. When strong it produces lateral growths, which, as they increase in size, tend to make the plant compact and dense, whilst as its young shoots produce flowers in abundance, it cannot be ranked as a shy bloomer. From the natural habitat of the plant it probably will occur to growers in this country that it requires strong heat, an abundance of atmospheric moisture, plenty of sun as well as light and air; yet it will be found advantageous to shade it from the hottest sun in this



FIG. 13.—SACCOLABIUM CÆLESTE.

country, as being beneath glass the foliage is apt to become yellow, or burnt, which would not occur in the open air."—SPECIALIST.

[The illustration (fig. 13) represents the beautiful *Saccolabium cæleste*, to which our correspondent refers.]

ONCIDIUM GRAVESIANUM.

THIS plant is one of the latest additions to the already long list of *Oncidiums* known to cultivators, many of which, however, have proved very short-lived under artificial conditions; this species, however, appears to have no weakness of this sort, and increases every year. It is a native of Pernambuco, and was discovered and imported with *Cattleya labiata* by Messrs. F. Sander & Co. There is, says the "Garden and Forest," a very strong resemblance in the flowers to those of *O. crispum*, and a variety of this now in bloom is almost identical in colour with *O. Gravesianum*. The resemblance ends with the flowers, the growth being very distinct. The whole flower is a rich dark bronze, the inner half of the lip being bright yellow; there are over twenty flowers on each of the three panicles borne on the plant, and they appear to last a long time in good condition. *O. Gravesianum* thrives well at the cool end of the

Cattleya house, where a temperature of 50° at night during winter seems to suit it, and prevents the tendency to premature growth, which is apparently a habit of this species when cultivated.

THE ORCHID WEEVIL.

WRITING in an American contemporary a correspondent refers to the danger to cultivators of introducing that dread pest the Orchid weevil, which has left unmistakeable evidence of its ravages on most of his plants of *Dendrobium Phalaenopsis* as they were imported. He had not found any of the insects since the plants came six months ago; but the other day there were two plants whose bulbs were discoloured and felt soft to the touch. A dissection disclosed several of the grubs in each bulb. While there is, perhaps, no reason for alarm when one is forearmed, it would be disastrous if, through oversight, this pest should gain a footing in the Orchid houses throughout the country. There is no known remedy except to cut off the affected bulbs and burn them. This is harsh treatment, but it must be rigorously followed up if we would keep our plants in health. It is easier to detect the insect in the pseudo-bulbs of a *Dendrobium* than in those of a *Cattleya*, as they are slender, and a cavity is more evident to the touch, hence we need have no fear of being able to control these invaders in the case of this *Dendrobium*.



THE WEATHER IN LONDON.—During the past week the weather in the metropolis has been of a variable character. Sunday was fine, but very windy and rather cold. Monday also proved fine, although it rained in the evening. Tuesday likewise was fair; but Wednesday opened wet, and at the time of going to press it is still raining.

— WEATHER IN THE NORTH.—Frost, thaw, wind, rain, snow, sleet, have made the past eight days almost as unpleasant as they could well be. Perhaps Saturday and Sunday were the most disagreeable, especially the former part of Sunday, when blinding sleety showers were driven by a high southerly wind. The afternoon, on the other hand, was pleasant. Monday morning was seasonable with 3° frost, but the evening and night were tempestuous. Tuesday morning was somewhat calmer, but recurring showers of rain and sleet continued, and the wind was bitterly cold.—B. D., *S. Perthshire*.

— ROYAL NATIONAL TULIP SOCIETY. — A special meeting of this Society will be held at the Old Bull's Head Inn, Market Place, Manchester, on Saturday, the 3rd February, at three o'clock, for the following purposes:—1st, To elect a President of the Society, Vice-Presidents, and other officers. 2nd, To consider and decide what shall be done about the next Exhibition, the Manchester Botanical Society having given notice that their annual donation will be in future withheld. 3rd, To consider, and if thought desirable, sanction a proposal for the establishment of a southern branch of the Society. Mr. James W. Bentley, the Honorary Secretary, hopes, as the meeting is a very important one, that there will be a good attendance.

— BELVOIR CASTLE GARDENS.—Only a gardener of great capacity and varied attainments would be competent to succeed the late Mr. Ingram at Belvoir. Mr. W. H. Divers, Ketton Hall, who has been appointed to the important charge, is a thorough gardener, his knowledge of hardy flowers and shrubs, obtained at Weirton and Linton, being as great as that on fruits and vegetables, and therefore he is the right man for Belvoir. Mr. George Drabble, principal foreman in the Burghley gardens, has been engaged to succeed Mr. Divers at Ketton Hall.

— EARLY FIELD MUSHROOMS.—A correspondent of an Edinburgh evening paper writes:—"A basketful of Mushrooms (*Agaricus campestris*) was gathered on the 12th ult. in the Queen's Park. All the specimens were large, the pileus of each being about 4 inches broad. They were strong and healthy, and have evidently sprung up in less than a week. The very mild weather may account for this remarkable growth, assisted, perhaps, in some mysterious way by the moon, for it is an old saying that 'Mushrooms grow more rapidly when the moon waxeth than when it waneth.'"

— GARDENING APPOINTMENTS.—Mr. Arthur Bowman informs us he has taken charge of the gardens at Manor Heath, Halifax, Yorks, the seat of G. Marchetti, Esq. Mr. John Doe succeeds his brother as gardener to Lord Saville at Rufford Abbey, Ollerton, Notts.

— DEATH OF MR. W. ROWLANDS.—A Liverpool correspondent informs us of the death of Mr. W. B. S. Rowlands, nurseryman, of West Derby, Liverpool, which took place on the 15th ult. Mr. Rowlands was a successful exhibitor for many years at horticultural shows in Liverpool.

— DEATH OF MR. J. C. CHAPMAN.—We regret to announce that on the 19th ult. Mr. J. C. Chapman died at Kennington at the age of seventy-two. He had been connected with the London seed trade for more than fifty years, and during the past six years he had been in the employ of Messrs. Cooper, Taber, & Co.

— EARWIGS—A CORRECTION.—In the article on "The Latest about Earwigs," on page 68 of our last week's issue, there is a slight printer's error, which, of course, was obvious to all readers. The third sentence, commencing on the seventh line, should read, "Some entomologists of note have endeavoured to prove that the rightful name of this insect is the 'earwing,'" not "earwig," as printed.

— IS PETROLEUM A SUITABLE INSECTICIDE FOR MELONS AND CUCUMBERS?—Thinking that this question would be of interest to all gardeners who have not tried petroleum for these plants, I venture to write hoping that some of the practical readers of the Journal who have used it for the above purpose will give their method and the results.—W. B.

— ORANGE CULTURE IN CALIFORNIA.—Notwithstanding the difficulty which the cultivator of the Citrus tribe has found in California by reason of scale insects and diseases, the extension of Orange culture goes on at an enormous rate. The "Anaheim Gazette" states that in that vicinity at least 3000 acres more have been added recently to the area already in existence. Judging by what is stated by other California papers, very little success has ever followed the many suggestions for getting rid of the Orange scale. If a number of Pennsylvania farmers of the old German race were sent out to care for these trees, we ("Meehan's Monthly") fancy the trunks and branches would be all annually white-washed with lime, and we judge, from the great success they have in keeping down all sorts of scale insects as well as fungus diseases, by the use of limewash on their fruit orchards little trouble would be found from the Orange scale or any other pest of that fruit tree.

— HELLEBORUS NIGER.—Mr. W. Bardney writes:—Large clumps of *Helleborus niger* that have been placed in pots and boxes, may, if in moderately rich material, be kept in them for several years. The only attention needed is a cool house or frame after flowering until they can be plunged outdoors in an open sunny position. A little feeding during the season of growth is very beneficial; the stronger the growth the finer and more numerous the flowers. When grown on this principle the plants can readily be brought into flower at intervals, or may be retarded according to the time they are likely to prove most serviceable. Good plants outside are very useful, and would succeed those grown in pots and boxes. The time of blooming depends largely upon the weather, even when covered with handlights. I also find that these plants do not improve by being disturbed too often—that is, frequently lifted and then planted out again. When large supplies of flowers are needed *Hellebores* are amongst the most useful plants that we can cultivate.

— NARCISSUS TELAMONIUS PLENUS. — Our correspondent continues—The value of this bulbous plant for forcing is not half so well known as it should be. It can be forced nearly as well and as early as the Roman Hyacinths. The bulbs may be obtained from growers in July, and should be potted then or placed thickly together in boxes, an excellent plan when many flowers are required for cutting. The treatment given to Roman Hyacinths is all that is needed. What can be more useful and handsome than between 400 and 500 of these flowers from a box 2 feet by about 16 inches during the early days of January? The flowers come large from good bulbs, and are well coloured even when forced in moderately brisk heat. The single, but smaller flowers of *N. obvallaris* are certainly useful and pretty when cut, but this variety is no earlier than the common double Daffodil, and does not yield nearly the same amount of bloom, nevertheless it is well worth forcing. Narcissi are destined to be forced much more largely in the future than during the past.

— "THE KEW BULLETIN."—We have to acknowledge the receipt of the "Kew Bulletin" for December, 1893, with appendix iii., the latter containing lists of staffs in botanical departments at home, in India, and the colonies. Among other interesting and useful information in the "Bulletin" are articles on "Root Disease of Sugar Cane," "Peruvian Colonisation," "Horticulture in Cornwall," "Botanical Station, Dominica," "St. Vincent Arrowroot," "Coffee-leaf Disease in Central Africa (Preventive Measures)," "West African Botanic Stations," and some Miscellaneous Notes, from which we extract the following five paragraphs that follow. An index to the volume for 1893 is also included.

— COLONIAL GARDENING APPOINTMENTS.—Mr. Henry James Davies, a member of the gardening staff of the Royal Gardens, Kew, has been appointed a gardener for service in the Royal Botanic Gardens, Calcutta and Darjeeling. Mr. John Robert Ward, a member of the gardening staff of the Royal Gardens, has been appointed Superintendent of the Public Gardens at Nagpur, Central Provinces, India. Mr. William Lunt, a member of the gardening staff of the Royal Gardens, has been appointed, with the approval of the First Commissioner of Her Majesty's Works and Public Buildings, Botanical Collector for Kew to Mr. Theodore Bent's expedition to the Hadramaut Valley in South Arabia. The flora is only conjecturally known, and no botanical collections appear even to have been made in it. The expedition left London on November 24th, and is expected to return about April of next year.

— BOTANY IN QUEENSLAND.—It is with great regret that intelligence has been received at Kew of the abolition by the Government of Queensland, amongst numerous other posts, of that of Colonial Botanist, held by Mr. Frederick Manson Bailey, F.L.S. Mr. Bailey is held in high esteem in the colony, and "strong efforts were made to induce the Government to reconsider their decision so far as the colonial botanist was concerned." Mr. Bailey was one of the recent explorers of the Bellenden-Ker range, and has contributed to Kew type specimens of the numerous additions that he has made to the flora of Queensland, and indeed of Australia ("Kew Bulletin," 1891, page 275). The colony is so largely dependent on its botanical resources that it cannot dispense with the services of a botanical expert more than temporarily. It is to be hoped that in the meantime the organisation of the colonial botanist's office will be maintained, and the valuable Government Herbarium properly cared for.

— ILEX PARAGUENSIS.—In the "Kew Bulletin" for 1892, p. 132, will be found some notes on certain plants yielding Paraguay Tea or Yerba de Maté, one of the most important economic products of South America. Until recently, the plant generally grown in gardens for *Ilex paraguensis* was *Elæodendron quadrangulatum*; this has large shining green Laurel-like leaves, and is totally unlike the plant from which Paraguay Tea is obtained. In September last Kew received, through the kindness of Senor Glaziov, Director do Passeio publico, Rio de Janeiro, seeds of the true *I. paraguensis*, some of which were sown, and the remainder distributed to the following botanical gardens: Antigua, Calcutta, Ceylon, Demerara, Edinburgh, Jamaica, Natal, Paris, Singapore, and Trinidad.

— STRAWBERRIES IN INDIA.—According to Mr. M. A. Lawson, Government Botanist, Madras, Strawberries grown in the Nilgiris revert to a feral form ("Kew Bulletin," 1892, p. 106). It is not easy to see why this should be the case if they are propagated from runners. A collection of seeds of the best kinds was procured and sent out to Madras, and Mr. Lawson records the results, which are so far satisfactory in the following extract from the Annual Administration Report of the Government Botanical Gardens and Parks, Nilgiris, 1892-93. The following varieties raised from seed obtained from Kew have produced fine fruit, and promise to do well on these hills:—Sir Charles Napier, Waterloo, Crescent Seedling, Duc de Malakoff.

— VITICULTURE IN URUGUAY. — Mr. Vicc-Consul Greenfell reports from Monte Video:—During the last three or four years an increased interest has been shown in the cultivation of the Vine, and it has assumed considerable proportions in the districts of Salto, Paysandú, and in the vicinity of Monte Video. The country generally is well adapted for the growth of the Grape, but the wine manufactured as yet is not of a high-class character, and principally of the red description. Want of experience and knowledge of treatment may be the cause of this, but every effort is being made to improve the quality and extend the industry, for, on account of the high tariff on all

imported wines, there is a ready demand for as much as can be produced. The appearance of the phylloxera (*Phylloxera vastatrix*) has caused a certain alarm amongst the Vine growers, but stringent measures have been taken by the Rural Association to prevent the propagation of this justly dreaded scourge of the Vine. The spread of this pest would be a serious calamity for this country just at a moment when the wine industry is assuming important proportions, with every prospect of a wide development. Hitherto the phylloxera has been unknown in Uruguay, and it has doubtless been introduced by plants or cuttings brought from countries where the plague existed. These are now strictly prohibited from being imported from Europe in either shape, with the hope of preventing, if possible, the further multiplication of the blight into the country.

— VISITORS TO KEW DURING THE YEAR 1893.—The number of persons who visited the Royal Gardens during the year 1893 shows, according to the "Kew Bulletin," an increase of 379,229 on the attendance for the preceding year, and is the largest as yet recorded, except for 1890, when it reached 1,839,966. The total number of visitors for the past year was 1,733,386, as compared with 1,354,157 in 1892. The detailed numbers for 1893 are: January, 16,405; February, 33,899; March, 135,821; April, 284,811; May, 284,586; June, 184,244; July, 197,944; August, 329,410; September, 145,593; October, 73,650; November, 27,595; December, 19,428; Total, 1,733,386. The total attendance on Sundays was 676,894; on week days 1,056,492. The two totals used formerly almost to balance; the present disparity is in part accounted for by bank holidays. The greatest monthly attendance (August) was 329,410; the smallest monthly attendance (January) was 16,405. The greatest Sunday attendance (on June 18th) was 29,891; the smallest (on December 10th) was 318. The greatest week day attendance (on May 22nd) was 100,737; the smallest (on January 17th) was 110.

— IS THE YEW POISONOUS?—In answer to this question (page 30), the Yew is described in Loudon's "Trees and Shrubs" as follows: "Derivation from *toxon*, a bow, being formerly used in making them, or from *taxis*, arrangement, from the leaves being arranged on the branches like the teeth of a comb: or from *toxicum*, poison; though Pliny says that poison (*toxicum*) was so named from this tree which was considered poisonous." In another portion of the description of this tree it is said in a wild state the Yew affords food to birds by its berries. In Richard Smith's work on the "Fir Tribe," it is again described as "*toxicum*" poison, the common Yew being esteemed poisonous. These trees are not troubled with insects. The question arises, Do birds eat the seeds or only the sweet pulp that surrounds the seed? Laurel seeds are pronounced poison, though the pulp I have partaken of myself, having lived in a part of the country where they fruited abundantly. The seed of the Yew I would consider rank poison, as I happen to know a man well who had a son poisoned with eating Yew berries. The tree which these berries were obtained from is one of the finest in existence. I also know a case where a horse died from eating branches of the Yew tree. Parents ought to warn children from eating these and other similar kinds of berries.—J. S.

— DEATH OF MR. E. GEORGE.—It is with much regret that we are informed of the death on the 18th ult. of Mr. Edward George, head gardener to the Earl of Abingdon, Wytham Abbey, near Oxford. Mr. George enjoyed uniformly good health until he was quite recently attacked with influenza, and this did not prevent him attending to his usual duties. He had, he thought, sufficiently recovered to admit of his visiting a friend who was recovering from an illness, and he walked some few miles to do so. Subsequently he suffered a relapse, pneumonia supervened, and he sank rapidly. His widow and family of nine children in their suddenly sad bereavement have our sincere sympathy. Mr. George's first appointment as head gardener was in 1864 to the Marquis of Clanricarde, Portumna Castle. Two years afterwards he succeeded his father, who had for many years occupied a similar position to the Earl of Clanricarde, Garbally. Leaving Garbally to settle in New Zealand, where he acquired a farm, he remained there but for about two years, and on his return to this country became head gardener to T. W. Boord, Esq., M.P., Ockenden, Sussex, remaining there six years, and finally for a like period being at Wytham Abbey, the gardens of which he had transformed from a comparatively indifferent state to one of fruitfulness and growing interest. To young gardeners Mr. George was at all times considerate and helpful, and there are many of them who, with his personal friends, will retain many kindly memories of him.

— VIOLETS IN IRELAND.—A GOLDEN VISION.—I cull a note from the garden department of the "Irish Farming World," page 830. It is on Violet growing in Col. Clements' garden in Kildare, gardener Mr. Sime. After describing the *modus operandi* of culture, the writer goes on to say:—"There is no mystery in the cultivation. Attention to a few simple details, and the reward is thousands of Violets, none less than a shilling apiece." As this statement was not contradicted in a subsequent issue, are we to take it as correct, or is it blarney? Twenty Violets to the pound sterling! What say you for the ould country? "Hurroo!" says—PADDY.

— WHITE SWEET PEAS.—Does any grower in this country know anything of the merits of the American white Sweet Pea Emily Henderson, as compared with the best pure whites that we already have in such varieties as Queen of England and Old White? These are good forms, and it would be interesting to learn if in any way Emily Henderson is superior. No doubt there is room for the production of a purer white, but some flowers lack substance and entirely fail to give that purity which is so much to be desired in white flowers. That the Sweet Pea should be so popular for sale shows how important such a hardy summer flower is to those who cultivate for market. The most favoured hues are white, pink, and scarlet. We have so many hues and markings in Sweet Peas, all beautiful enough, but yet are of little service to the market grower.—D.

— THE WAKEFIELD PAXTON SOCIETY.—Mr. J. Campbell, gardener to Mrs. Micklethwaite of Painthorpe, who is one of the oldest members of the Wakefield Paxton Society, gave an essay on "The Primula" at the weekly meeting on the 21st ult. The table was tastefully decorated with the bloom of red and white Primulas, arranged in various devices upon Asparagus foliage, with a fine specimen plant in bloom as a centrepiece. Mr. Campbell has successfully grown the Primula for over twenty years, and in his paper he gave his fellow Paxtonians the benefit of his long practical experience, clearly and fully explaining how to treat the plant, from the sowing of the seed about the middle of February to the blooming period in winter. A long and interesting discussion ensued on the paper, in which Mr. Jesse Hardwick, Mr. J. Thomas, Mr. Pitts (Walton), Mr. Vere (Milnthorpe), and Mr. Wardman took part. Mr. Campbell replied to a number of questions, and adhered to his opinion that February is to be preferred to May for sowing of Primula seed.

— STORAGE OF BULBS AND TUBERS.—The time of year has arrived for many bulbs, tubers, and corms to be brought out from their winter quarters for a fresh start, and there will be some little anxiety as to whether they have come through the winter safely. In how far does the result rest with ourselves? Do we store them away in the right temperature? Caladiums, Gloxinias, and Achimenes are often stored in too cold a temperature. The first named I have stored where the temperature never falls much below 70°, and every tuber came through the winter safely and started well. Gloxinias and Achimenes are sure to keep well if the temperature does not fall below 40°, and even tuberous Begonias keep best when the temperature does not fall much lower than 40°. Too often they are stored away in the potting shed or other frost-proof shed, and I know from past experience the result of such storage is far from favourable. In modern glass houses it is not easy to find a place where they can be stored without looking unsightly, but with a little scheming it can generally be managed.—JOHN MILNE.

— A GARDENER ON THRIFT.—Members of the Exeter and District Gardeners' Association met under the presidency of Mr. Andrew Hope, in the Guildhall, on the 24th ult., to hear one of their Secretaries (Mr. T. E. Bartlett, gardener at Knightleys, Exeter) read a paper on "Thrift, or How to be Independent." In the discussion which followed, Mr. A. George, lecturer on horticulture under the Devon County Council, spoke strongly on behalf of the Gardeners' Royal Benevolent Institution. If all gardeners, he said, would join that Institution they would not want any Government pensions. They could pension themselves. Mr. Weeks, head gardener at Stoke House, thought it would be one of the grandest things the Association had ever done if they could manage to get a few old hands on the Royal Benevolent Institution. Mr. Hope drew attention to the United Horticultural Benefit and Provident Society. For 6d. a week, he said, could be drawn 10s. 6d. per week in time of sickness, and a larger amount for a larger subscription. The membership was about 500, and the amount of sick pay paid in 1892 was only £88. The funds were invested in 3 per cent. Corporation Stock.

— IVY-LEAVED PELARGONIUMS AND HELIOTROPES AT COOMBE WARREN.—Amongst the large number of excellent plants which will at these gardens soon be offered for sale are very many tall Ivy-leaved Pelargoniums and Heliotropes specially trained for the formation of large floral pyramids on the lawn in summer, and for covering trellis-work on walls bordering the pleasure grounds. These plants are chiefly on two or three stems, and range from 2 feet to 7 feet in height, all being neatly tied to sticks. Pyramids of these plants formed a striking feature at Coombe Warren, as they usually do at Mr. Bertram Currie's place, Coombe Wood. They are not readily produced, but once obtained can, planted for the particular object, soon produce charming effects. There is a very large stock of Carnations of all sorts in pots and planted out also, for these flowers formed one of the late Lady Wolverton's very special fancies.—D.

— MR. G. WOODGATE.—A very wide circle of friends of this excellent gardener and Secretary of the Kingston Chrysanthemum Society will, we are assured, learn with deep regret that, because of the death of Lady Wolverton, whom with a former Lord Wolverton Mr. Woodgate had so faithfully served at Coombe Warren for fourteen years, an entire clearance of all in the gardens at Coombe Warren will shortly take place. Whilst Mr. Woodgate has received the customary month's notice, the rest of the garden staff, with the exception of a couple of young men, have had but a week's notice, and many who had long been employed in the gardens left absolutely on Saturday last. It is indeed bad enough for good and faithful servants when death intervenes and robs them of an esteemed employer, that misfortune, however, is greatly intensified when, as in this case, not only has there been not the least provision made, but all are almost summarily sent adrift. We hope that Mr. Woodgate may soon secure another engagement. All the plants are to be sold. Should the necessities of the case compel his transference elsewhere the Kingston Chrysanthemum Society will have to deplore the loss of one of the most active and estimable as well as popular of secretaries, one whose place it will not be easy to fill. This we trust may be avoided, but still there is the possibility. We learn that the work of arranging the present year's schedule is well forward, and Mr. Woodgate hopes to soon complete it.

— THE FRUITERERS' COMPANY AND THE AGRICULTURAL DEPARTMENT.—Thursday last being the feast day of the conversion of St. Paul, the patron saint of London, the Fruiterers' Company elected its Master and Wardens for the ensuing year, while in the evening the members of the Company were entertained at dinner. The festivity was held at the Albion, Aldersgate Street. This festival day has a celebrity peculiar to itself. During the middle ages, and even down to quite recent times, it was an article of constant belief that the whole character of the coming year is prognosticated by the condition of the weather on this day. For the sake of Londoners generally, however, it is to be hoped that this tradition does not hold good in the present day, for the weather on Thursday may be described in one word—miserable. But the weather apparently did not affect the attendance of the members of the Company and the guests, as the room was well filled. The Lord Mayor occupied the *place d'honneur* on the immediate right of the new Master (the Commendatore Camillo A. Sperati), on whose left sat the Italian Ambassador (Count Tornielli). The remaining company included Alderman Sir J. Renals (Upper Warden), Sir F. Evans, M.P., Mr. Alderman and Sheriff Moore, the Italian Ambassador (His Excellency Count Tornielli), Count Hirschel de Minerbi (first Secretary to the Embassy), Principe A. C. Corsini, Duca di Cosigliano, Marquis Paulucci di Calboli (Attaché to the Embassy), the Hon. Robert Reid, Alderman Sir J. Whitehead, Bart., M.P., Alderman Sir H. E. Knight, and others, horticulturists being represented by Messrs. G. Bunyard, T. F. Rivers, and J. Wright. Following the loyal toasts the Master proposed, in eulogistic terms, the health of the Italian Ambassador, Count Tornielli, who replied in French, alluded in the course of his speech to the importance of fruit growing in every country, and declared that his own country was as greatly interested in fruit culture as England, and that both countries ought to cultivate it to the fullest extent. Sir James Whitehead was the only other speaker who made reference to fruit. He said it was to him not a very agreeable thing to see that some of the fruit on the tables, though it could have been grown in this country, had not been grown by us at all. Since the Company started its scheme of fruit culture in 1889, however, great progress had been made in the matter of fruit growing. He trusted that when the Upper Warden (Sir Joseph Renals) came to the Mayoral chair he would make the increased cultivation of fruit one of the features of his mayoralty. He (the speaker) had received a letter

from Sir Edmund Lechmere, the member for the Evesham Division of Worcestershire, asking the Company to assist in a great fruit exhibition, which it was purposed to hold in that county during the present year, and the Master and Clerk of the Company had received many letters from different parts of the country in regard to the same subject. At the Court meeting earlier in the day it had been decided that at the Evesham Show they would give two medals for the cultivation of fruit.

before the Company, providing that they were willing to avail themselves of it. The announcement was received with loud cheers.—("City Press.")

PTYCHORAPHIS ANGUSTA.

THIS exceedingly graceful Palm was exhibited at a meeting of the Royal Horticultural Society on October 10th, 1893, having been sent



FIG. 14.—PTYCHORAPHIS ANGUSTA.

There was behind them a force which might make the Company a great power for good in advancing the interests of fruit culture in this country. He had a letter from the Agricultural Department, in which he was informed that if the Company would formulate a scheme of technical education in fruit culture to be applied to the various districts of the country where fruit might be properly cultivated, that Department was prepared to consider a proposition for subsidizing it. That being so, he considered that there was a great future

from the Royal Gardens, Kew, and a first class certificate was awarded for it. The accompanying illustration (fig. 14) portrays the elegance of the plant, which in some respects equals that of a Cocos, but has a more sturdy growth. The leaves are large and arch beautifully; those on the plant, from a sketch of which the engraving has been prepared, being nearly 2½ feet in length. For table decoration this Palm would be admirably adapted, and if in commerce it will doubtless be in demand for that purpose.



A ROYAL CUP FOR ROSES.

IT may interest your readers to know that Her Majesty the Queen, who has condescended to patronise the joint Show of the Windsor, Eton, and District Rose Society, and the National Rose Society, to be held at Windsor on Wednesday, June 27th, has presented a silver cup, which will be given as first prize in a class for twelve Roses, distinct, single trusses, open to all amateurs. It is hoped that this class will be within the powers of the majority of Rose growers, and that a strong competition will result.—W. COLIN ROMAINE, *Hon. Sec.*

HYBRID TEAS.

I HAVE for a long time been convinced that however carefully a writer may word his sentences they can be twisted into a meaning he never intended. I therefore, in matters of opinion, write my views as clearly as I can, and leave criticisms on them unnoticed. It is a different matter, however, when one's correct statement of facts is questioned. I therefore assure "J. B." (page 75) that I am neither deaf nor daft. I stated that Hybrid Teas could neither be shown amongst Teas or Hybrid Perpetuals. Mr. Frank Cant's rider to the resolution only confirms this statement. It was that Hybrid Teas could be shown in any mixed class, and so could any Rose, Gallica, Hybrid Bourbons, Hybrid China, or anything else that the exhibitor thought worthy of a place; but where a class for Hybrid Perpetuals is made a Hybrid Tea amongst them must be a disqualification.

I am quite aware that there are two sets of Hybrid Teas in the National Rose Society's catalogue, but I had only to do with exhibition Roses in the remarks that I have given.—D., *Deal.*

[According to the report of the annual meeting of the National Rose Society (*vide Journal of Horticulture*, December 14th, 1893), Mr. Frank Cant moved that an alteration in regulation 14 be made, and after some discussion, it was proposed and carried that it should read "Hybrid Teas cannot be shown in the classes set apart for Teas and Noisettes, but may be shown amongst Hybrid Perpetuals and in mixed classes." The resolution was taken by our shorthand reporter, and confirmed by Mr. Mawley prior to publication.]

ROSE MRS. W. J. GRANT.

I FULLY endorse the remarks of "W. R. Raillem" (page 74) upon the re-naming of the above beautiful Rose by the American buyers, and consider they have been extremely courteous to the eminent raisers, to the National Rose Society, whose gold medal has been awarded to it, and to the lady whose name it bears. Some months ago, when Messrs. Dickson's catalogue appeared with the intimation of the change, I wrote them, saying that whenever blooms appear in my stand they will be labelled "Mrs. W. J. Grant."

It seems to me, moreover, that this is a matter in which the N.R.S. should make some official pronouncement, or complications may arise with reference to the medal. It will be possible, as matters stand, for a purchaser to exhibit this Rose again for the medal, and if told it is not eligible and confronted with the regulation, "No Rose which has won a similar prize . . . may compete," to reply, "But 'Belle Siebricht' has not been awarded a medal." Of course such action is not probable, and could be overruled if it did occur, but unpleasantness and dissatisfaction would be caused, and it is well to guard against the possibility of this.—J. B.

THE ROSARIAN'S YEAR BOOK, 1894.

WE received a copy of this publication last Thursday, and, like its predecessors, the one before us contains much useful information of special interest to rosarians. The frontispiece is a portrait of Mr. Frank Cant of Colchester, accompanied by a brief history of this well known Rose grower, written by the Editor, the Rev. H. H. D'Ombraim. From this we gather the following particulars, which may prove interesting to some of our readers:—

"It is sixteen years since Mr. F. Cant planted the first 500 Manetti and 400 Briar stocks in his father's garden at Mile End, Colchester. The following year, as no more ground was available in the garden, his father gave him free use of a two-acre field, which in a very few years he found insufficient scope for his requirements; he therefore embarked in a larger occupation of nine acres near Colchester Station, but finding this fresh land not altogether suitable for Rose growing, he hired an additional piece of land, about twelve acres, at West Bergholt, with a view to using the washings and waste water from the brewery at that place. He lived there three years, but as the quantity of land there was insufficient, and where he now resides was offered to him, he accepted it; and from the garden and 400 standards and 500 Manetti stocks he is proud to say he is the tenant of a farm of forty-five acres, and plants annually 100,000 dwarfs and 25,000 standard and half-standard stocks—of the dwarfs 40,000 are Briar cuttings, 30,000 seedling Briar, and 30,000 Manetti. It will be seen from these figures he is a strong advocate of the Briar in preference to Manetti.

"He seems to have first exhibited at the National Rose Society in

1881 or 1882. From that time he has steadily advanced, and three times during the years which have elapsed since then he has carried off that much-coveted prize, the Challenge Trophy at the Metropolitan Show, which by some has been called the Rose Derby; and once, also, the Jubilee Trophy. It would be useless to enumerate the numerous cups, medals, and prizes that he has obtained in all parts of the kingdom, for wherever there was competition, there he was sure to be found."

The Rev. A. Foster Melliar, Mr. G. Paul, Mr. C. J. Grahame, Mr. J. Harkness, Mr. Alex. Dickson, and Mr. W. J. Grant expatiate upon "A Symposium of Hybrid Perpetual Roses," some of the contributors giving lists of varieties which they consider best for exhibition. The Editor deals with "The Rose and the National Rose Society in 1893," and an article on "Garden Roses" by the recently deceased Mr. Walter H. Williams is particularly interesting. Mr. Alexander Hill Gray has some humorous "Rose Jottings," referring principally to Roses in the Channel Islands, while Mr. E. Mawley gives exhaustive information in an article on "The Weather of the Past Rose Year." Messrs. Bemrose & Sons, Limited, 23, Old Bailey, E.C., and Derby, are the publishers, and the price, as usual, is 1s. If there are any Rose growers who have not obtained the work it may be well for them to order it at once before the supply is exhausted. Its brisk sale is the best test of acceptability.

PEARS AND THEIR CULTURE.

[Read at Exeter by Mr. D. C. POWELL.]

THE Pear is a most delicious fruit, and is grown principally for dessert purposes, and for that it is preferred by most people to the Apple. Some varieties are grown for culinary purposes, and it would be well to turn attention to cultivating more of this section. These varieties, too, are most of them long keeping, and do not assume the soft texture when ripening as the dessert kinds, and, of course, are adapted for storing. To grow Pears to perfection a good knowledge of the proper soils, pruning, training, gathering, and storing of the fruit, diseases and insects affecting the health of the tree must be understood to be successful.

The soil that the Pear succeeds best in is a moderately strong loam, 2 feet deep, and well drained. Heavy clay soil is not suitable for producing fruitful trees, as it is known to retain moisture to a great extent. With such, draining must first of all be done, and the soil returned to the pit for planting the tree in must have other lighter, sandier soils incorporated with it, so that the roots can readily ramify in it, and receive the warmth and air necessary for the formation of fibrous roots, which are the real fruit producers. In preparing soil for Pear trees one should bear in mind that the object in fruit culture is to discourage by every means the downward tendency of roots into the subsoils. Therefore, the subsoils should neither be loosened nor manured. Where clay or other strong soils exist it is advisable to use stone or slate slabs at the bottom of the pits where the trees are to be planted. This also facilitates the action of root-pruning. Light sandy soils that are not considered of sufficient depth and strong enough in texture should be taken out in pits not less than 6 feet wide and 2 feet deep, in order that sufficient soil may be introduced to last and keep the tree in health for many years, some stronger soil introduced mixing with it, the sandy soil taken out if needful. If the soil is not rich at the time of planting nothing better can be used than loam. It is well also when planting to use some of the surface soil from parts of the garden under cultivation for vegetables, which has been enriched by constant dressings, for placing immediately over the roots. A little manure is advisable to use about the time of planting in proportion as the soil is rich or poor.

The operation of planting should be performed immediately after the fall of the leaf. Planting should not be done in wet weather, but deferred until the soil can be worked well. The soil having been previously prepared, holes should be taken out at least one foot wider than the breadth of the roots of the tree, which must be inserted to show when finished as much of the stem as when growing in the nursery ground. The soil should be made firm with the foot as the work proceeds, and when finished a mulching of long straw or litter should be secured to the ground to preserve the moisture in the soil at the roots, and serve also for protection of the young roots from damage caused by severe weather. All trees of heights requiring support should receive it immediately. Wall trees when newly planted should have a few of the main branches secured to the wall to prevent friction with rough bricks or stones. For planting in the open ground pyramids are as desirable as any; while bush-trained, umbrella-shaped espaliers and cordons may be grown in most gardens with very satisfactory results.

The growth of the Pear is such that almost any shape may be obtained that one wishes. As the Pear has a natural tendency to grow upright, there is no difficulty in acquiring a pyramid. In its natural state the Pear grows vigorously—hence, to grow trees in a very small compass a great deal of restriction is required. This is best effected by using the Quince stock, which has a very deranging influence on the Pear, exactly what is required. The Pear stock, or what is termed the free stock, is raised from pips, and is only suitable for weak-growing varieties to be grafted for orchard work. For walls, the horizontal, fan-shaped, and cordons are the best. These at the time of planting should have their stems so placed that when finished the base of them be not less than 4 inches from the wall.

Summer pruning should be done at the end of July and August,

not earlier, as the buds left would be induced to make growth instead of flower buds. If summer pruning has been attended to, little would be left over for winter work except on the walls, when the means used for securing the trees takes place, and this must be done when the latter are in a deciduous state. Galvanised wall eyes might be driven into the wall, to be permanent, and the branches fastened with tarred cord.



CROYDON CHRYSANTHEMUM SOCIETY.

WE are requested to state that the Croydon Chrysanthemum Society's Exhibition will be held on November 6th and 7th.

JUDGES JUDGED.

SINCE the above heading introduced to Chrysanthemum growers a matter of sufficient interest to call it a *cause célèbre*, free discussion has been allowed us in these pages, and full advantage taken by expressions of individual opinion from many thinkers. Doubtless many besides myself have wished for a little from those it directly concerned, but that is their affair. I do not take up this pen to prolong the fray, the Fates forbid! That fierce light which beats upon a throne has not been less intense on the judgment seat of the north. One valuable lesson brought home to all directly or indirectly interested is a knowledge of what a powerful engine the Press of our day is, and all who have to act in a public capacity cannot but feel that they are

"Free, yet in fetters held
Till the last hour,
Gyves that no smith can weld
Nor rust devour."

A feeling which may be looked upon as a safeguard by exhibitors, yet deter many a good man from coming forward in the capacity of a judge, an onerous position, and one may say an honorary one; for beyond expenses, which all do not get, there is little inducement for a man to don the ermine. It is rather a sacrifice on the altar of criticism for the public good.

In conclusion—and as perhaps all possible views of the question have now been shown—may I say we should temper justice with mercy, if only from selfish motives; or

"When blooms are staged, opponents gauged
And honours all but won,
We hear the cry, adjourned *sine die*,
For judges there are none."

—E. K.

THE JAPANESE CHRYSANTHEMUM ELECTION.

HAVING had the honour of proposing the arrangement as to the selection of the best varieties of Japanese Chrysanthemums so admirably conducted by Mr. Molyneux, the results of which were published last week, I would offer cordial thanks to all concerned for the kindly way in which the suggestion was supported. My original criticism as to the somewhat misleading effect of Mr. Mawley's analysis related solely to the earlier exhibitions of the National Chrysanthemum Society. But his later published analysis of the flowers staged at the Royal Aquarium last November still serves to justify my suggestion, as on comparing his list of that Show with the election list, I find that out of the top twenty-four of Mr. Molyneux's compilation only twelve come into the top twenty-four in Mr. Mawley's latest analysis, whilst six in Mr. Mawley's top twenty-four are not to be found in the other list at all. Thus the great value of the election is fully demonstrated, and growers who have waited for its publication now know that no analysis of the number of times any one, or even a dozen of flowers may be exhibited at any show, is to be regarded as so reliable as is such an unanimous expression of the opinions of the leading private growers and exhibitors. I would suggest that readers carefully preserve these election lists, and if such election be annually conducted, yearly, and if possible, earlier—that is, so soon as possible after the close of the show season, the lists would prove to be exceedingly interesting, as showing the rate of change in popularity enjoyed by various flowers, as also enabling growers quickly to learn which of the novelties are the best. It must be admitted now that either the twenty-four or twelve selected would, if good blooms, take some beating from any others, however new they may be.—A. D.

THE result of the Chrysanthemum election in last week's issue (page 63) is most interesting, and I am sure will not fail to be appreciated by a great number of your readers. In these days of so many new and striking varieties one is apt to grow too many, not caring to discard the older kinds until the new ones have proved themselves superior; hence the desirability of a standard list.

Many gardeners, like myself, have to grow exhibition blooms, though not for the exhibition table. In the voting list there is one variety that I am astonished to find so far down—viz., Mrs. A. Hardy, in my

opinion the gem of all the Chrysanthemums grown. Where is the variety that can equal it in its purity of whiteness? Compare Avalanche, for instance. For breadth of florets it equals the best; for size and in build of flower it is up to the average, and then there is that beautiful and attractive hirsute appendage which makes it so fascinating. There was not one amongst the many friends that called to see our Chrysanthemums but at once marked out Mrs. A. Hardy as the gem of the whole collection, though we had superb blooms of Vivian Morel, Edwin Molyneux, Mdle. Marie Hoste, Sunflower, Etoile de Lyon, Florence Davis, W. H. Lincoln, and many others.

If the drawback that it is a weak grower is advocated, I may say we do not find it so; on the contrary, we have found it quite vigorous. Our first bud (crown) was taken August 11th, the last August 18th; the largest flower was from the early bud, and was at its best October 30th. All opened free, and built up very fine flowers; but the blooms from the buds taken at the earlier dates were the largest, these being upwards of 8 inches in diameter, and correspondingly deep in build. Perhaps Mr. Molyneux, or some other noted grower, will be kind enough to explain why Mrs. A. Hardy takes so low a place in the voting list.—JOHN RANTON, *Broughton Hall*.

IN reply to our invitation for postcards containing "Yes" or "No" as indicating the wishes of the writers in reference to the publication of the voters' lists in the election of last week, we have had a shoal of "Yes's" and not one "No." We have had far more of the former than the number of voters, and there is no mistaking the general desire. We therefore publish the lists in alphabetical order.

It will be remembered that the request was for a list of twenty-four Japanese varieties for exhibition placed in the order of merit (one voter only named twenty-three), also indicating by asterisks the varieties that would, in the opinion of the voters, make the finest stand, having regard to the colours of the blooms.

VOTERS' LISTS.

Mr. JOHN APLIN, Hasfield Court, Gloucestershire.

*Vivian Morel	*Etoile de Lyon	Excelsior
*Charles Davis	Mdle. Marie Hoste	*Mrs. C. H. Payne
*Ed. Molyneux	*W. Seward	Golden Wedding
Robert Owen	*Florence Davis	Beauty of Castlewood
*W. H. Lincoln Improved	G. C. Schwabe	Primrose League
*Sunflower	Stanstead White	J. Shrimpton
*Mdle. Thérèse Rey	*W. Tricker	Lord Brooke
*Col. W. B. Smith	Avalanche	Duke of York

Mr. C. BECKETT, Juniper Hill, near Dorking, Surrey.

*Vivian Morel	*The Tribune	W. H. Lincoln
*Mdle. Thérèse Rey	William Seward	*Etoile de Lyon
*Edwin Molyneux	Primrose League	Golden Gate
*Col. W. B. Smith	*Stanstead White	Beauty of Exmouth
*Charles Davis	Lord Brooke	G. C. Schwabe
*Sunflower	Mdle. Marie Hoste	Mrs. Falconer Jameson
*Robert Owen	Golden Wedding	*Mrs. C. Harman Payne
*Geo. W. Childs	*Excelsior	Eda Prass

Mr. E. BECKETT, The Gardens, Aldenham House, Elstree, Herts.

*Madame Thérèse Rey	Louise	Golden Wedding
*E. Molyneux	*Robert Owen	Chas. Shrimpton
*Chas. Davis	*G. C. Schwabe	Lord Brooke
*Vivian Morel	*Sunflower	The Tribune
*Colonel Chase	Violetta	Silver King
*Mrs. F. Jameson	*Miss Dorothy Shea	J. W. Child
*Stanstead White	Beauty of Castlewood	Eda Prass
Golden Gate	Colonel W. B. Smith	*Excelsior

Mr. JAMES BEISSAND, The Gardens, Castle Huntly, Perthshire, N.B.

*G. C. Schwabe	*Vivian Morel	*Waban
*Mdle. Thérèse Rey	*Charles Davis	Madame C. Audiguier
*Mdle. Marie Hoste	John Shrimpton	Puritan
Lord Brooke	Charles Blick	W. K. Woodcock
*Edwin Molyneux	Mrs. Ed. Beckett	Mons. Bernard
*Stanstead White	Colonel W. B. Smith	*Sunflower
*William Seward	M. S. Wheeler	Florence Davis
*Viscountess Hambledon	*Boule d'Or	W. H. Lincoln

Mr. P. BLAIR, Trentham Gardens, Staffordshire.

*Vivian Morel	*Florence Davis	G. C. Schwabe
*Mdle. Thérèse Rey	*Mdle. M. Hoste	Puritan
*Col. Smith	*Sunflower	Lord Brooke
*Charles Davis	Charles Blick	Robert Owen
*Edwin Molyneux	*R. Flowerday	Vice-Pres. Audiguier
*Etoile de Lyon	*W. H. Lincoln Improved	Stanstead White
*Avalanche	Viscountess Hambledon	W. W. Coles
Beauty of Castlewood	Miss Anna Hartshorn	R. C. Kingston

Mr. C. BLICK, Hayes Common, Kent.

*Vivian Morel	*Viscountess Hambledon	*Mrs. T. Denne
*Mdle. T. Rey	Rose Wynne	*Lord Brooke
E. Molyneux	R. Dean	G. W. Childs
*Charles Davis	Miss Dorothy Shea	*Colonel W. B. Smith
*W. Seward	President Borel	Charles Blick
Mrs. C. Harman Payne	Wilfred Marshall	*Louise
J. Shrimpton	Mrs. P. Blair	*Cecil Wray
*The Tribune	*G. C. Schwabe	W. Tricker

Mr. T. CARLING, Dove Park, Liverpool.

*Mdle. Thérèse Rey	Vice-President Borel	Golden Wedding
*Viviand Morel	*G. C. Schwabe	Mrs. F. Jameson
*Col. Smith	*Etoile de Lyon	Sunflower
*Edwin Molyneux	*Mrs. C. H. Payne	Eda Prass
*Robert Owen	*Florence Davis	Princess May
*Charles Davis	Charles Blick	W. H. Lincoln Improved
Lord Brooke	Stanstead White	*Marie Hoste
*William Seward	Miss Dorothy Shea	Puritan

Mr. G. CARPENTER, Byfleet, Surrey.

*Charles Davis	*E. Molyneux	W. Tricker
*Viviand Morel	*Stanstead White	Lord Brooke
*Sunflower	*Etoile de Lyon	Mons. A. E. Carrière
*William Seward	*Florence Davis	Golden Wedding
*Mdle. Thérèse Rey	Robert Owen	J. Shrimpton
*Col. W. B. Smith.	Mdle. Hoste	Golden Gate
*President Borel	Le Versaux	Excelsior
*Avalanche	W. H. Lincoln	Amos Perry

Mr. JAS. J. CARRUTHERS, Hillwood, Corstorphine, Midlothian

*Viviand Morel	*W. Tricker	Col. W. B. Smith
*Ed. Molyneux	*W. H. Lincoln	Boule d'Or
*Mdle. Thérèse Rey	*Sunflower	*Gloire de Rocher
*Charles Davis	Florence Davis	J. S. Dibbens
G. C. Schwabe	*W. Seward	Etoile de Lyon
Stanstead White	Mrs. E. W. Clarke	*Excelsior
*Mons. Bernard	J. P. Kendal	Mrs. Beckett
Mdle. Marie Hoste	Avalanche	*Mrs. Wheeler

Mr. ARTHUR COOMBS, Himley Hall Gardens, Dudley, Staffordshire.

*Stanstead White	*W. Tricker	E. W. Clarke
*Colonel W. B. Smith	*Mons. Bernard	J. S. Dibbens
*Mdle. Thérèse Rey	*Etoile de Lyon	Mdle. Marie Hoste
*Chas. Davis	*Sunflower	Avalanche
*E. Molyneux	Miss Dorothy Shea	Mrs. F. Jameson
*Viviand Morel	W. H. Lincoln	W. W. Coles
*Golden Wedding	G. C. Schwabe	Gloire du Rocher
*W. Seward	Florence Davis	Lord Brooke

Mr. EDWIN COOMBS, Teddington, Surrey.

*Col. W. B. Smith	*W. H. Lincoln	Robt. Owen
*Viviand Morel	*G. W. Childs	Lord Brooke
*Madame Chas. Molin	*Madame Edouard Rey	Chas. Davis
*Stanstead White	*G. C. Schwabe	Sunflower
*Etoile de Lyon	Edwin Molyneux	William Seward
*Chas. Blick	President Borel	Excelsior
*Mdle. Thérèse Rey	Miss Dorothy Shea	Mdle. Marie Hoste
*Eda Prass	Violet Rose	Mrs. Harman Payne

Mr. CHARLES COX, Brickendon Grange, Hertford.

*Edwin Molyneux	*Robert Owen	Ed. Prass
*Mdle. Thérèse Rey	*Colonel W. B. Smith	Mrs. Harman Payne
*Viviand Morel	Mons. Bernard	M. Marie Hoste
*William Seward	Florence Davis	W. H. Lincoln
*Stanstead White	*Miss Anna Hartshorn	Mrs. F. Jameson
*Charles Davis	*William Tricker	Mrs. C. W. Wheeler
Avalanche	*G. C. Schwabe	President Borel
*Sunflower	Beauty of Castlewood	V.-President Audiguier

Mr. FOLKARD, Sand Hutton Hall, Yorks.

*Viviand Morel	*Colonel W. B. Smith	Lord Brooke
*Charles Davis	*Boule d'Or	Mrs. F. Jameson
*Edwin Molyneux	*Florence Davis	J. Shrimpton
*Etoile de Lyon	G. C. Schwabe	*Stanstead White
Mrs. C. H. Payne	Wm. Seward	Wm. Tricker
*W. H. Lincoln	*G. W. Childs	Puritan
*Mdle. Marie Hoste	Sunflower	Gloire du Rocher
*Robert Owen	Mrs. E. W. Clarke	Madame Bernard

Mr. G. FOSTER, Glendenagh Gardens, Teignmouth, Devon.

*Viviand Morel	Miss Dorothy Shea	*Excelsior
*Charles Davis	*Golden Wedding	Princess May
*Mdle. Thérèse Rey	*Etoile de Lyon	Beauty of Castlewood
*Edwin Molyneux	*G. W. Childs	Violet Rose
William Seward	Sunflower	Mrs. E. W. Clarke
*Col. W. B. Smith	Mrs. C. Harman Payne	Mdle. Marie Hoste
*Florence Davis	*Eda Prass	G. C. Schwabe
*Robert Owen	W. H. Lincoln	

Mr. DONALD FORBES, Crofton, Aigburth.

*Mrs. C. H. Payne	*Mdle. Marie Hoste	*Boule d'Or
*Col. W. B. Smith	Etoile de Lyon	Miss Dorothy Shea
*Viviand Morel	*Beauty of Castlewood	Miss Anna Hartshorn
*Charles Davis	*Stanstead White	Avalanche
*Florence Davis	*Sunflower	Mrs. F. Jameson
*Edwin Molyneux	G. C. Schwabe	Mdle. Thérèse Rey
Mrs. E. D. Adams	Violet Rose	Golden Wedding
*Wm. Tricker	Mrs. E. W. Clark	W. H. Lincoln

Mr. T. GARNETT, The Gardens, St. John's, Wakefield.

*Mdle. Marie Hoste	*Waban	W. Tricker
*Sunflower	*G. C. Schwabe	Princess May
*Colonel W. B. Smith	Chas. Davis	Miss Dorothy Shea
*Mdle. Thérèse Rey	*Viviand Morel	W. W. Coles
*Robert Owen	*W. Seward	Mrs. A. G. Hubbick
*E. Molyneux	Lord Brooke	Eda Prass
*Mrs. Harman Payne	Florence Davis	Boule d'Or
*E. D. Adams	Chas. Blick	Excelsior

Mr. CHAS. GIBSON, Morden Park Gardens, near Mitcham.

*Viviand Morel, late bud	*Florence Davis	Duke of York
*Edwin Molyneux	*Gloire du Rocher	William Tricker
*Mdle. Thérèse Rey	*Sunflower	*Mdle. Marie Hoste
*Col. Wm. B. Smith	Robert Owen	Mrs. G. C. Schwabe
Avalanche	*Lord Brooke	Mrs. C. W. Wheeler
*W. H. Lincoln	Chas. Davis, late bud	Alkeric Lunden
John Shrimpton	William Seward	*G. W. Childs
*Etoile de Lyon, late bud	Stanstead White	Mrs. C. Harman Payne

Mr. ALEX. HAGGART, Moor Park, Ludlow.

*Viviand Morel	*Miss Dorothy Shea	Beauty of Castlewood
*C. Davis	*G. W. Childs	G. C. Schwabe
*E. Molyneux	*Avalanche	Stanstead White
*Mdle. T. Rey	*Lincoln Improved	J. S. Dibbens
*Col. W. B. Smith	Etoile de Lyon	Violet Rose
*Miss Florence Davis	Wm. Seward	Robert Owen
*Sunflower	Wm. Tricker	Mrs. E. W. Clarke
*Mrs. C. H. Payne	Mdle. M. Hoste	Charles Shrimpton

(To be continued.)

PROGRESS IN WINTER FLOWERS.

"NOTHING can stand still; it must either go forward or backward." These words were uttered by the genial chairman of a social gathering of horticulturists a few evenings ago; and the remark, to some extent, applies to winter flowers. That considerable progress has been made in this direction no one will probably attempt to confute, though were corroborative evidence needed it may be found in the well-known nurseries of Messrs. H. Cannell & Sons, at Swanley and Eynsford. This enterprising firm has certainly gone forward, and simultaneously made vast strides in the production of winter flowers. This applies particularly to such as Primulas, Cyclamens, Cinerarias, Begonias, and Zonal Pelargoniums, flowers that for variety of colour and brilliancy are unequalled. Nowhere can these floral gems be seen in better condition than at the above mentioned Kentish nurseries; and while this has been so in the past, a call last week convinced the writer that it will be more so in the future.

With regard to Primulas these are now making a grand display at Swanley; several large houses are filled with plants in bloom, and the same may be said of Eynsford, where the 300 acre seed farm of the firm is situated. At one time the first-mentioned nursery was the "Home for Flowers," but the appellation may now be extended to Eynsford, even at this dull period of the year, to say nothing of the summer and autumn, when acres of annuals and other flowers produce a gorgeous display. This is by the way. To return to Primulas. These are now at their best, and anyone who is desirous of making a selection of some of the best kinds in cultivation has certainly an opportunity to do so at Swanley. Nowadays the varieties must be exceptionally good to command notice, so keen is the competition, but it is evident that so far as Primulas are concerned the Kentish raisers do not mean to lag behind in the race for notoriety. Indeed, it may safely be said that the firm in question mean to retain their position in the front rank, for some remarkable breaks have been obtained. Perhaps the most noticeable of these is a novelty sent out this year, and known as The Lady. This variety is unique, and possesses a graceful appearance that so far is wanting in other Primulas. For decorative purposes it is unequalled, and will probably be a plant of the future. At first sight it may appear a retrogressive movement in producing this Primula, inasmuch as the flowers in some respects resemble those of the original species, and the plant may possibly meet with some opposition from those persons who prefer the large though heavy blooms of the ordinary types. Time, however, will tell its own tale, and we shall possibly see The Lady firmly established in every garden. In habit of growth the plant is all that can be desired, the foliage being very dark, and the stems nearly a purplish black. Above the leaves rise not one, as in many Primulas, but numerous stems of pure white blossoms, these being produced in whorls to a height of from 12 to 18 inches. As a table plant this Primula will be in demand when it becomes well known, it being admirably adapted for this purpose. A pink-flowered variety of the same type has also been raised, and efforts are being made to procure other colours in flowers of the same character.

It must not be thought, however, that attention has only been centred on the above-mentioned type of Primulas. There are many tastes to cater for, and Messrs. Cannell & Sons are wise enough to recognise that fact. The result is that numerous other Primulas are well represented. So far as size and substance of bloom goes the single kinds can well hold their own. In many varieties the flowers are remarkably large, measuring more than 2½ inches in diameter. They are, too, of extraordinary substance, particularly the white and pink varieties, some of the petals being nearly as thick as a worn shilling, and in most cases beautifully fringed. Among the newer varieties Eynsford White is conspicuous by reason of its distinctiveness. The habit of the plant is good and the flowers pure white, large in size and stout in texture. A more beautiful white Primula no one need wish to have; but a still newer kind has been produced, and will be put in commerce shortly. This rejoices in the designation of Her Majesty—a most appropriate name. It is an improvement on the well-known White Perfection, the foliage being broad and the flowers wonderfully fine, pure white, with a rich orange eye. Her Majesty will doubtless justify its honoured title and reign over many other white Primulas. Cannell's White is another charming variety of vigorous but dwarf growth, producing immense trusses of large white flowers well above

the foliage. Duchess of Fife is a beautiful kind with fine blush pink blooms, and in Cannell's Pink we have a Primula of the same shade as the popular La France Rose. The plant, moreover, has an excellent habit of growth, and the flowers are borne in large trusses on erect stems. Princess Mary is a splendid white, the petals being fimbriated to a marked degree, which indeed is a distinct feature of most of the varieties mentioned. Canterbury is a noteworthy variety, white tinted pink, and the same may be said of Peach Blossom. Pink Queen will probably attract notice when sent out next year, the fine delicate pink flowers forming a pleasing contrast to the green Fern-like foliage. The red and purple shades are also remarkably rich, Improvement being a good representative of the former type. The flowers are of a large size, bright red in colour, while the habit of the plant is exceptionally good. Intensity is another richly coloured variety, and the same may be said of Swanley Red. Semi-Red, of the semi-double kinds, is deserving of notice, and Swanley Blue stands pre-eminent amongst others of a bluish shade.

What has been said with reference to the strain of Primulas in general may also be applied to the Cyclamens. These are splendidly grown, and at the present time make a marvellous display of bloom. The plants are conspicuous for their habit of growth and free-flowering proclivities, as many as from fifty to 100 blooms being on specimens in 6 and 7-inch pots. The flowers, moreover, stand erect above the beautifully marbled foliage, requiring no support of any kind. No attempt is made to compile a long list of named varieties, and there is little need for this, inasmuch as the strain is a remarkably good one. The colours, however, are kept separate, these including white, red, and rose. The white-flowered plants are particularly fine, and worthy of the firm which they represent. Those with red and rose-coloured flowers are likewise grand specimens of cultural skill, and indicate that more than ordinary attention is paid to these beautiful winter flowers.

Regarding the fibrous-rooted and evergreen Begonias it is questionable whether these can be anywhere seen in better condition than at Swanley. During the whole of the winter they produce a charming display, and the graceful habits of the plants and flowers render them indispensable for decorative purposes. All the best kinds are grown, and foremost amongst these stands Gloire de Sceaux. This is an attractive plant, with handsome rich bronze foliage, and large soft pink flowers. It should be found in every warm greenhouse. Some very fine forms of *B. semperflorens* are also included in the collection, and these, as most gardeners know, are true to their name, practically flowering all the year. *B. Carrieri* likewise justifies mention being made of it, inasmuch as plants in 6-inch pots produce an enormous amount of blooms at midwinter. Other kinds are extensively grown, and the 100-feet house last week presented a sight that alone repaid the visit.

As to the Zonal Pelargoniums every reader of the *Journal* knows that the name of Cannell is inseparable from these. Hundreds of excellent varieties have been sent out by this firm, and for many years past particular attention has been paid to the production of kinds that will flower freely all through the winter. In this, as in other matters, success has attended unceasing labour, and the Swanley Zonals are known throughout the civilised world. Further improvements are, however, being effected, and for the present it is sufficient to say that the Zonal Pelargoniums at Swanley are now flowering as profusely as at midsummer. Other winter flowers, including Carnations and Clivias, are also extensively grown in the above-mentioned nurseries.—C.

STAPELIA PATULA.

THE reason is not far to seek why the members of this large and strange genus are so little cultivated by general collectors of plants. Known for a good reason as Carrion Flowers, the characteristic foetid smell of the flowers, large and even handsome as some of them are, is not agreeable to say the least to many persons. The plants are interesting and remarkable from several points of view, and deserve greater attention from the hands of those not too fastidious in scents. Belonging to a strange order Asclepiadaceæ, which includes the curious *Dischidia Rafflesiana*, the *Asclepias*, and others, they are far from the least curious of these anomalous species.

There are reasons for thinking that though the *Stapelia*s have a considerable range in South Africa, they are gradually dying out. The natives eat them as food, and the introduced ruminants as sheep and goats, which are being bred in increased numbers, also feed off them. These causes have led to their proximate extermination near towns, and as the country becomes settled the same causes will act more largely. The seed being set exclusively by the agency of insects, any disturbance in the balance of Nature is likely to affect them prejudicially. But apart from such eventualities the curious succulent leafless stems, the flowers, with their curious and diverse coronal appendages, the hairs frequently found upon the disk and margins of the corolla, the marblings and generally lurid colouring of the same organ, separate them from the general run of succulent plants. There are no difficulties in growing them, either from seed or cuttings. A well-drained compost of sandy loam with broken-up brick rubbish suit them. The seed are

singularly retentive of life, and germinate in from one to three days, retaining their vitality (many of them) for eight or ten years. If the plants are kept dry in the winter a short snap of frost is not harmful, and by placing them near the glass in the full sunshine they may be grown without artificial heat.

About sixty species are now included in the genus of *Stapelia*, though Mr. N. E. Brown, who has given much attention to South African plants, is of opinion that these are, many of them, only local forms or strains, or natural hybrids, and possibly only of an evanescent nature. Many of the so-called species are so connected by intermediate forms, blendings, and interminglings of characters, that the classification



FIG. 15.—STAPELIA PATULA.

is attended with unusual difficulties, and this is doubtless the reason why the few botanists who have given attention to the genus vary so much in the species included. Only five were known to Linnaeus, who gave the generic name after an Amsterdam physician. Masson, who was a collector for the then royal collection at Kew, published in 1796 drawings of forty-one species. Jacquin in 1806, and Haworth in 1812, added more new species. About the same time the botanist Robert Brown broke up the genus into four, but later botanists as Decaisne, Bentham, and Hooker have brought most of them back into the genus *Stapelia*.

Stapelia patula (fig. 15) was named in 1809 by Willdenow. Three vicinities in South Africa within forty miles of each other in the neighbourhood of Mitchell's Pass are given as its habitat. Like so many of the *Stapelia*s it is subject to considerable variations, and these run into, by close gradations, forms described under other specific names, that Mr. Brown finds it impossible to give a set of characters which shall specifically separate them. *S. comata*, *S. unguipetala*, and *S. depressa*,

according to this botanist, are possibly only forms of *S. patula*. The flower in the engraving, from a specimen in the succulent house at Kew, was drawn when the divisions of the corolla had become reflexed, does not give the stellate appearance characteristic of the earlier stage. The mass of hairs thrown off by the margins and reflexed, are a dull pink in colour, the surface of the corolla is marbled in fleshy purples. The eggs shown were deposited on the flower whilst our artist was making the sketch, the dipterous insect being attracted and deceived by the rank flesh-like odour of the flower.

ROYAL HORTICULTURAL SOCIETY OF IRELAND.

MR. J. H. CUMMING of St. Helen's Gardens, Booterstown, has some cause to feel proud of his success in a movement initiated by him in the interest of this Society. As a gardener, his appeal to gardeners has gone straight to their hearts and pockets, with the gratifying result that he is now able to place at the disposal of the Society a 20 guinea cup for competition at the Winter Show. "The gardeners' cup" will be the cup which cheers on many a Chrysanthemum grower this coming season.

It is gratifying to gardeners to find that Mr. Cumming has been re-elected on the Council. He was ubiquitous in good work at the shows last year, and being in sympathy with us exhibitors he is to us "a tower of strength" in the hour of trial. Other gardeners have, too, found a seat on the Council board, and if they give as much practical assistance, as doubtless they will, it will greatly relieve the Secretary and Hon. Secretary of that heavy pressure put on them at the last moment.

Lord Ardilaun has accepted the office of President, vacant by the death of the Duke of Leinster, and took the chair at the annual general meeting. Hamilton Drummond, Esq., the Hon. Sec., if not able to present as glowing a report as he could have wished, could say the Society is holding its own—that if the look-out is not exactly brilliant, it at least is brighter than has obtained for some years. Substantial prizes are attracting fresh exhibitors into the field, and if Dublin society does not patronise what is worthy of their support, it must be that their tastes have deteriorated or been diverted into fresh channels; or it may have been that when poverty came in the office door of the Society their love for it flew out of the window. But if the attractions of our shows as exemplified last year does not lure them back it will not be the fault of the few gentlemen who, by sacrifice of time and money, have invigorated it, and made it worthy of the notice they accorded to it years ago.—E. K., *Dublin*.

[We have been favoured with a similar communication to the above from our esteemed correspondent Mr. W. J. Murphy, of Clonmel, indicating that progress in gardening is being made in Ireland.]

GARDENERS' HOLIDAYS.

THE interesting article under the above heading by "E. K." (p. 43) comes very refreshing at this time of the year when nearly everything seems so dull indoors, and everything out of doors so dirty. At any rate, that is the state of things with me. Rain falling nearly every day makes the ground so wet that it is almost impossible to get on it to do a little pruning, wheeling manure and digging being quite out of the question. It will be a treat when we can get on the ground again, when the frost comes to dry it up for a while. Still it is no use being dull over the matter. The bad weather certainly gives us this advantage, we can get indoor work and little odd jobs well forward, so as to take advantage of the fine weather when it does come.

"E. K." makes a good hit when he likens a gardener to a snail, obliged to carry his shop on his back, this being more especially the case with those who like myself have single-handed places. When I want a holiday I have to leave my "missus" in charge, with many instructions about damping down, giving air, shading, and closing, what time to go to the fires, how much fuel to put on, and how to leave the dampers. If I want to take the "missus" out for a day, I sometimes ask my employer to do what is bound to be done, and I am glad to say he is always most happy to do anything he can for me, so that I may enjoy myself. That is more than many employers would do. Some employers I have known who stop a gardener's pay when he has a day's holiday, never thinking how much overtime that man has worked. In many cases in the summer time, when Vines have to be seen to, for stopping, tying, and thinning, such work cannot be done very well in the heat of day, neither can tying in Peach trees or Cucumbers.

But when a couple of gardeners, single-handed or otherwise, do go out for a day with our wives, the latter soon turn their backs on us, as they say we talk nothing but "shop." But what better could we have to talk about? Nothing. I do not believe there is anything more interesting to gardeners than gardening. There cannot be, and there are always so many things we want to talk about. How many degrees of frost were registered on such a date; whether the Potatoes were affected by it; when we cut the first dish of Asparagus, or gathered the first dish of Peas; whether the grub got in the Onions or Carrots, or the disease caught the Potatoes; how our favourite Melons, Cucumbers, or Tomatoes are fruiting; if we intend going to such and such a Show, and if we intend exhibiting; if a Show should happen to be just past, criticising the awards and asserting that our second prize stand, collec-

tion, or specimen was much better than those that took the first prize and if we should have been so fortunate as to take the first prize instead of the second we do not forget to talk about it.

Then how enjoyable it is to have a long walk with a neighbouring gardener, say in November (as I have done many times) to go and see a famous gardener's collection of Chrysanthemums. We used to go, two or perhaps three of us, eleven miles across country to have a good look over one of the finest collections in the midlands, but we were well repaid for our trouble, for the "big gardener" would very kindly give us cuttings of new or scarce varieties that we did not possess before. I have never had the pleasure or otherwise of a ride on an Irish jaunting car, but I have ridden many miles in a farm waggon with a bundle of hay for a seat, and so had enough shaking in a few hours to last me for months. All these things, however, do not deter me from enjoying my "holiday" when I get one, and I would gladly go through much more than the above to have "a look round" with "E. K."—A SINGLE-HANDED GARDENER.

TREE PLANTING.

MR. MOLYNEUX (page 70) raises a very interesting as well as an important matter when he criticises Mr. Luckhurst's (page 43) reference to trees, newly planted in November, making roots immediately. That Mr. Luckhurst can defend his position I have no doubt, but I could not make such an assertion respecting deciduous trees and shrubs without full knowledge, although I cannot but think that Mr. Luckhurst is right. So far as relates to evergreen trees and shrubs there can be no doubt whatever but that planting, or even laying-in in November, does cause immediate root action. Still, even in this instance something may depend on the temperature of the soil as compared with that of the atmosphere; when we lay in trees and shrubs temporarily, perhaps for a month or six weeks, ample opportunity is then furnished to discern what the roots have been doing in the meantime. I do not think that tree roots, when in the soil, are ever absolutely dormant, but I suppose after duly planting trees in November few persons have ever relifted them purposely to see whether or not the roots have been active. It is a point that should be finally determined.—A. D.

It was a pleasure to read Mr. Luckhurst's excellent article on this subject on page 43, as it shows plainly what can be achieved, during such an extraordinary drought as we experienced last summer, by judicious planting in the first instance. I find it quite the reverse with a small plantation of standard and pyramid Apple trees of which I have recently taken charge. Most of them have not made any growth, and only a few about 6 inches in length. But no wonder, as I am told they were planted late in the spring of 1893, and instead of mulching and watering, as should have been done, I found Cabbages planted to within 1 foot of the trees, and Parsnips between the rows. If that was not enough to draw all the moisture away from the roots of the trees I am at a loss to know what would do so.—W. M.

I OBSERVED Mr. E. Molyneux (page 70) expresses his doubts as to the accuracy of Mr. Luckhurst's statement (page 43) relative to trees making many rootlets shortly after being lifted and transplanted in the late autumn. I can corroborate all Mr. Luckhurst says on that point in his excellent article. I have practised the system advised for upwards of thirty years, October being the preferable month. My rule is to lift the bushes or trees just before any of the leaves fall, but when they and the wood appear well ripened; and although after being planted they shrivel or drop, so long as a few of the terminal leaves adhere I have confidence that all is well. Were I to miss October planting, rather than plant later or in the early spring, I would prefer to wait till another October came round. When done properly, with judicious subsequent treatment there is neither loss in growth nor crop the following year by planting in October, and although a few of the points of the less ripened shoots die, it appears extra rooting power is given to the plant. This is proved by the excessive wig-like rootlets formed, even sometimes in a fortnight after planting. I could, if necessary, give some very striking examples of transplanting in October.—W. T.

THE PRICE OF NEW PANSIES.

UNDER this heading "J. B. R." (page 69) alludes to the great number of new Pansies being introduced this season, and to the almost general dropping from the hitherto stereotyped price of 5s. per plant to 2s. 6d. This will, another season, be no doubt the maximum price, with perhaps here and there a higher price when the variety is of exceptional merit and the stock short. The next move must be in a very general reduction in the price of the previous year's sorts, now quoted at from 1s. to 2s. each, if the interest in Pansies is to be kept up, for with such a multitude of varieties amateurs frequently do not know what kinds to select, and would be tempted to buy more plants at from 4s. to 6s. per dozen than at a higher price.

"J. B. R." alludes to certificates being granted by societies to which but little value is attached, but any certificates granted by the leading Scottish Pansy Societies I, for one, accept the judgments in the full belief that they have been given by men who know the leading Pansies in cultivation, and are desirous of recognizing only really first class flowers. It has always been the same at the meetings of the Midland Counties Pansy Society, as I am sure the growers from the North of England, Scotland, and Belfast will bear witness. The same may be said of

the certificates granted at the York Gala every year, as that also has become a great Pansy and Viola gathering, where the leading growers from Scotland and other places exhibit. The utmost care is taken there to secure sound judgment, and only flowers of high quality can obtain certificates. As the greater portion of our best new varieties of Pansies and Violas come from Scotland, and some from the North of Ireland, it would be difficult to organize any central judicature in this country where all new varieties should be submitted. Supposing London was selected, where are the competent judges to be found in the south who are thoroughly up in all the sorts already in cultivation, and on whose judgment the raisers would have implicit faith; and if got from distant parts of the country, how are their expenses to be paid?

We are now having extended opportunities of seeing a very large number of new varieties at the Pansy exhibitions in London, York, Wolverhampton, Birmingham and Shrewsbury, and our southern friends will have an opportunity of seeing a great number of new kinds in May at the London show; the midland growers have their opportunities at the exhibitions I have named. What I wish the compilers of catalogues would do is to say when and where the certificates were granted. This would carry weight, and no certificates given by any comparatively unknown society would be regarded as a reliable guide to purchasers.

There is still one other help to amateurs—the notes on new kinds if written by someone who knows Pansies well and sees many of the new flowers during the season. Such notes have from time to time been given in the *Journal of Horticulture*, and we florists have much to thank the Editor for in being so ready always to open its columns to floricultural matters. Those persons who are greatly interested in these two flowers would help in the work materially by sending notes of first-class sorts as proved by them during the autumn and winter as a guide to amateurs in purchasing.—W. D.



FRUIT FORCING.

Vines.—*Eyes and Cut-backs.*—Eyes or buds may now be started either in pots, pans, or pieces of turf. Select from well ripened wood, filling the pot or pan with rich friable loam, inserting the buds with a pinch of sand half an inch beneath the surface, plunging the pot in a bottom heat of 80°. Cut-backs should be placed in a house where they will have a temperature of 60° to 65° at night, and 70° to 75° by day. When they have started into growth shake them out and return to the same size of pot, using good friable loam, and give a rather close and moist atmosphere until re-established, when they should have a position near the glass, so as to insure sturdy, short-jointed, thoroughly solidified growth.

Pines.—*Fruiting Plants and Starters.*—These will now be throwing up fruit, and should have a mean temperature of 70°, varying it 5° according to the weather, admitting air at 80° with sunshine, but not lowering the temperature, allowing it to rise to 85°, closing between that and 80°, and if it rise somewhat after closing it will be advantageous rather than otherwise. The plants recently started for fruiting will, if in good condition at the roots, produce strong suckers. When the suckers are large enough to handle all except one to each plant must have the growth checked by taking out the centres.

Successional Plants.—To supplement the autumn-potted plants select others which have been wintered in 7 or 8-inch pots, choosing the most vigorous. Those remaining may be reserved until the general spring potting, when they can be shaken out and treated similarly to suckers. Good fibrous loam with the turf well reduced, placed under cover to become dried, is a suitable compost. Drain the pots well, dust soot or dry wood ashes over the crocks to exclude worms, and ram the soil firmly round the plants, keeping them well down in the pots to admit of copious supplies of water being given when necessary; 10-inch pots are suitable for Queens, and 11 or 12-inch for those of more robust growth. A temperature of 60° to 65° will be sufficient for these plants, also those potted last autumn, and about 85° bottom heat. Plants in beds about to be started into fruit must not have the heat at the base of the pots over 90° or 95°, or their roots will be injured. If sufficient fruit be started to meet the requirements, later successional plants that have not been subjected to a high temperature may be advanced slowly, they with autumn-rooted suckers requiring careful watering, especially where the heat at the roots is supplied by fermenting materials.

Figs.—*Earliest Trees in Pots.*—The trees started in November or early in December for affording ripe Figs in April or early in May, will be throwing out fresh roots plentifully, the bottom heat being kept steady at about 70° to 75°. Bring the fermenting material up to the top of the pots, and place pieces of rich turf of good size round the rims to keep the roots near home and to induce sturdier growth than would be the case if the roots came over the top of the pots to ramble unchecked in the fermenting material. Maintain a good moisture in the atmosphere by syringing twice a day and damping as may be required in bright weather. Admit a little air at 70°, increasing it with the tem-

perature; close at 75°, and if the temperature rises to 80° or 85° it will be an advantage. See that there is no lack of water at the roots. The drainage being good there is little danger of giving Figs too much water, many crops are lost by the soil being kept too dry. The temperature in dull weather must be kept at 60° to 65°, 55° to 60° at night when the external air is cold, but 5° higher when the weather is mild. Disbudding will need to be attended to as growth advances and gross shoots stopped, but the finest Figs are borne upon extensions.

Early Forced Planted-out Trees.—The trees started at the new year will, if the borders have been brought into a properly moist condition by watering with tepid water, be starting into growth, and may have the night temperature gradually raised to 55°, 60° to 65° by day from fire heat, with an advance from sun heat and free ventilation to 70° or even 75°. Syringe twice a day, except when dull, then damp instead, and see that the borders are thoroughly moistened. If the trees are weak a thorough soaking of tepid liquid manure, not too strong, will assist the growth.

Peaches and Nectarines.—*Earliest Forced House.*—The trees will need syringing every morning and afternoon after the fruit is set and swelling in order to keep down red spider. If, however, the weather be dull the syringing must be practised early in the afternoon, so that the trees may become fairly dry before night, or if that does not take place the afternoon syringing must be dispensed with, damping the paths and borders instead, as keeping the trees dripping with water through the night causes weak growth, thin foliage, and discoloured points of the leaves. Water the inside border with liquid manure, which will assist the fruit in swelling, especially in the case of weakly trees long subjected to repeated forcing. Vigorous trees will not require any stimulants, excessive vigour being unfavourable to the fruit safely passing the stoning process. Remove a few of the worst placed and surplus fruit, but thin carefully until the fruit is the size of a small marble. Disbudding must be followed up, leaving a growth at the base of each bearing shoot, and another at its extremity, or at least level with the fruit. The shoots retained for attracting the sap to and supporting the fruit should be stopped at the second or third leaf, but the basal shoots must be trained to take the place of those now bearing fruit. Shoots upon extensions must be left at 12 to 15 inches distance apart to form the bearing shoots of the future. It is a great mistake to crowd the trees with growth for which there is not space enough to allow of its full exposure to light and air; therefore avoid overcrowding, seeking to maintain an equal balance of growth throughout the trees and its solidification by judicious ventilation.

Second Early House.—Trees started at the new year will be in blossom, and should have a temperature of 50°, 5° less on cold nights, 50° to 55° by day artificially, and 60° to 65° from sun heat, not allowing a rise above 65° without full ventilation. Lose no opportunity of admitting air, ventilating from 50°, avoiding, however, cold currents, and leave a little ventilation constantly at the apex of the house. Damp the surfaces occasionally to secure a genial atmosphere, but avoid a close saturated one. Shake the trees on fine mornings to disperse the pollen, or brush the blossoms over lightly with a rabbit's tail mounted on a small stick, or apply the pollen to the stigma with a camel's hair brush.

Houses Started Early in February.—The trees to afford fruit in July must now be started, they having commenced to swell their buds naturally. Syringe the trees occasionally until the blossom buds show colour, when it should be discontinued, but sprinkle available surfaces once or twice a day to maintain a genial condition of the atmosphere, avoiding a close, stagnant one. If the flowers are very numerous thin them by rubbing the hand downwards on the under side of the shoots, which will strengthen the remainder, enabling them to set better. Examine the trees closely, and if there be any aphides fumigate with tobacco or other insecticide, so as to destroy them before the flowers expand. Maintain a temperature of 40° to 45° at night, and 50° by day, above which ventilate freely. When the flowers expand raise the temperature to 50° at night, 55° by day, and 60° to 65° from sun heat with free ventilation. On cold nights the temperature may fall to 45°, or even less, also 50° by day, allowing a little ventilation constantly at the top of the house.

Strawberries in Pots.—The earliest forced plants are characterised by a fair set of fruit. Remove all badly set or deformed fruits, leaving from four to half a dozen of the most promising fruits to each plant, and aid their swelling by liquid manure. To cause the fruit to swell the temperature should be 60° to 65°, advancing to 70° or 75° by day with moderate ventilation. Avoid drying currents of air, as they injuriously affect the swelling of the fruit. Examine the plants twice each day, giving water only to those needing it, and in sufficient quantity to show at the drainage. See that succession plants are kept free from aphides, fumigating, if necessary, before the flowers open. Introduce more plants for succession.

PLANT HOUSES.

Freesias.—Plants that have been grown in a cool temperature up to the present time are showing their flowers, and may, if wanted in flower, be placed in heat. The pots containing the plants should be placed on a shelf close to the glass to prevent the foliage drawing up weakly. If the temperature ranges about 50° to 55°, the flowers will soon develop. Keep the remainder of the stock where the temperature does not fall below 45°, they will be safe as long as frost can be excluded from them. Pans or pots containing small tubers should occupy a shelf. When well rooted weak liquid manure will benefit the whole of the plants wonderfully.

Francoas.—Young plants in 3-inch pots may be transferred to others 5 inches in diameter, using a compost of good loam, sand, and one-seventh of manure. If the plants are given greenhouse treatment they will continue to grow slowly, will develop into strong specimens early in the season, and commence to push up strong spikes of bloom. It is best to raise these plants annually from seed. When the stock is short one-year-old plants may have the growths thinned out. Those subjected to this treatment, then shaken out and placed in small pots, will be ready for larger ones, and should be given the same treatment as young plants. Seed can be sown any time during February.

French Pelargoniums.—Cut-back plants that have been pinched and started again into growth will have sufficiently filled their pots with roots to be transferred into those of a larger size. The plants ought to be placed into the sizes in which they are intended to flower. The soil should consist of fibry loam, sand, and one-seventh of decayed manure, pressing this firmly into the pots so that sturdy growth will result. Loose potting, with the addition of leaf mould, will result in soft leafy growth, which must be avoided. Place the plants where they can be kept perfectly cool; the shelves in Peach houses and vineries will do if no better position can be found for them. Frost only need be excluded. Do not give the plants too much water, and do not syringe the foliage. Watch for aphides, and destroy them directly they make their appearance by fumigating the house with tobacco smoke. Young plants raised from cuttings early in the season and placed in 5-inch pots in September will be well established, and the flowering shoots well extended and strong. Keep these plants for the present close to the glass, where the temperature does not fall below 45°, where they will continue to grow satisfactorily.

Zonal Varieties.—Plants that are flowering must not be kept too close and warm, or they will start into soft growth and discontinue flowering. Do not overwater, and give air daily when the weather is favourable. Plants that have done flowering may be kept cool and moderately dry to harden them. These plants will, if introduced to gentle warmth again, in a month or six weeks come freely into flower. Young plants in 3-inch pots may be placed into 5-inch, using the compost advised for French varieties, and for the present give them the same treatment.

Liliums.—Plants of *Lilium Harrisii* must have heat to develop the flowers that have not expanded; they will open in a temperature of 55°. These have not proved any better than cut-down plants that flowered in the spring. Those intended for this purpose should be sturdy plants, about 1 foot high; keep them close to the glass in a cool house, where the temperature at night averages about 45°. Watch for aphides, and destroy them at once. Plants ready for removal from ashes may be stood in any cool position until they are green, when they should be placed on a shelf. *L. longifolium Eximeia* is one of the best and most useful of the longifolium section. Imported bulbs from Japan have invariably done well. The bulbs should be potted at once in 5 and 6-inch pots, according to their size. *L. auratum* and the lancifolium varieties may also be potted. The last should have five bulbs placed in each 7 or 8-inch pot. After potting place the pots in a cool house or frame, and cover them with cocoa-nut refuse or any other similar material until they start growing.

Hydrangeas.—Plants of *H. hortensis* that have enjoyed a good rest may be placed in an early vinery or Peach house just started. They will do in any position until they begin to grow, when they must be placed close to the glass. Be careful not to overwater. The usual syringing of the house will prove ample. Put into 5-inch pots the remainder of the plants as opportunity offers, and keep them cool. Plants of *H. paniculata grandiflora* should be pruned, leaving one or two eyes of the last season's wood. Place the plants in any cool house, and allow them to start slowly into growth.

THE BEE-KEEPER.

APIARIAN NOTES.

FEEDING BEES.

DURING January the weather varied considerably, with a temperature from 5° to 50°, and a fall of 3 inches of snow on the 26th; but with this exception it has been generally mild on the whole. Many bee-keepers have through my advice taken the advantage of the mildness, and fed liberally all suspected light hives. I am now informed by them that it was not a minute too soon, as several they had examined were almost destitute of stores.

Mild as the weather has been the flowers have not progressed so rapidly as was expected, nor are they so early in the aggregate as we have seen them. In the years 1860, '61, '62 Snowdrops were in full bloom early in the month, and bees in 1862 carried much pollen from them, also from Aconites, Croci, and the Hazel. On the 24th, 25th, and 26th of January, and almost every day in February much pollen was gathered. That year, as well as the two previous ones, turned out unsatisfactory for both bee-keepers and farmers. Contrasting these years with the present one there is a wide difference. Individual flowers are here and there much earlier, but these are exceptions to the rule.

THE PRICE OF HONEY.

The price of honey is fluctuating, depending altogether upon the season and the demand. I remember well in the year 1861, as well as 1890, '91, '92, of realising 3s. 6d. per lb. for some fine supers of Heather honey; and in 1891 2s. 6d. for some incomparable ones gathered on the Heather hills of Lochlomondside. Why these exceptional prices in so exceptionally bad seasons? In the first named years, everywhere, bees were on the eve of dying out the whole season. I had my bees in good condition to begin with, and kept them so, taking them to Arran early in the season. They were a long way ahead of the bees on the island, consequently could work and gather honey when others were not prepared to do so. I had a similar experience in other years and on different moors. The moral is, have your bees in full strength at the right time. It must not be inferred, however, that these high prices were the standard market value of honey.

There is a great quantity of honey in the market obtained by the too free use of the extractor. One bee-keeper of my acquaintance during the past summer extracted daily. The honey consequently lies on his hands, although offered at 6d. per lb., a price insufficient to recommend anyone to keep bees. Generally speaking, however, there has been little, if any, abatement in price of good honey for half a century past, and extra high prices were due to what is stated above. I have never sold my honey under 1s. per lb., nor will I ever do, nor advise people to keep bees in the expectation of getting profit from them if sold at a lower price.

The quality of honey ought to be the first consideration of the bee-keeper. Honeycomb should be free from colour and foundation; drip or run honey ought not to come into contact with the hands, nor to be taken from the comb until it has been sealed free from pollen, and at no time exposed to artificial heat.—A LANARKSHIRE BEE-KEEPER.

TRADE CATALOGUES RECEIVED.

Dobie & Dicks, Deansgate, Manchester.—*Vegetable and Flower Seeds.*

Dohie & Mason, Oak Street, Manchester.—*Seeds for the Garden and Farm.*

D. S. Thomson & Sons, Wimbledon, Surrey.—*Garden Seeds and Horticultural Implements.*

James Yates, Little Underbank, Stockport.—*Vegetable and Flower Seeds.*



* * All correspondence should be directed either to "THE EDITOR" or to "THE PUBLISHER." Letters addressed to Dr. Hogg or members of the staff often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post, and we do not undertake to return rejected communications.

Culture of Lavender (*R. D. C.*).—The articles to which you refer appeared in the *Journal of Horticulture* for September 5th, 1889, and October 10th of the same year.

Planting Trees (*W. W.*).—We are obliged by your notes, but there was no question on the other subject mentioned in your letter. When it arrives it will receive attention.

Rowan Tree (*Foreman*).—The botanical name of the Rowan tree is *Pyrus aucuparia*. It is also commonly known as the Mountain Ash, and is exceedingly ornamental when covered with large bunches of scarlet fruit.

Petunias in Pots (*Inquirer*).—If the plants are dwarf they will make fine specimens if grown in a very light position, in a greenhouse at present, and eventually in frames. If desired in flower early the shoots may be tied out and not topped, but if larger and later flowering specimens are preferred, topping and shifting must be resorted to. Tall plants with leafless stems are sometimes useful for grouping with other plants, and local requirements must be considered in this reference. Well-furnished, semi-globular specimens, are often exhibited from 2 feet to 4 feet in diameter. Whether your old plants are retained or not, it will be prudent to establish young plants from cuttings of the best varieties.

Eucharis Insects (F. U.).—We could find nothing in the box beyond fragments of curled and more or less shrivelled leaves. Specimens, which through want of firm packing, are much shaken in transit, cannot arrive in anything like the condition they were in when sent off. Answers in these columns are given for the convenience of regular subscribers.

Cutting down Thuja Lobbi (H. J.).—The best time to cut down the hedge to form a good bottom is in spring, or early in April if the weather is genial and showery. The shrubs may be cut down to about 1 foot less than the desired height of the hedge. This ought to have been done sooner for insuring a close base. Thuja Lobbi, properly T. gigantea, though making an excellent tall screen, it is not so well adapted for a low hedge as Yew and Holly.

Fig Trees in Large Pots (Bucks.).—The Fig trees which have grown long and shapeless may be cut back so as to form bushes, and they will bear after they have made a year's growth, provided the wood is well ripened. If cut hard back it will be necessary to pinch the strong growths to form well balanced heads, or the trees, if the variety is suitable, may be planted against a wall with a south aspect. They require a well-drained, firm, calcareous soil, and should not be planted until the weather becomes warmer.

Maggots in Carnation Pots (Inquirer).—What kind of maggot may be infesting the soil we are unable to tell, as you have not submitted specimens for inspection. If wireworm, insert some pieces of carrot just within the soil, and examine them every day. Small white grubs may be destroyed by watering the plants with clear lime water. Strong young Carnations succeed well outdoors if planted in good time in the autumn and the soil is made firm about the roots. Plant them outdoors as soon as the weather becomes milder, hardening them off previously.

Painting Hot-water Pipes (B. M.).—We know of no better mixture for painting hot-water pipes with than lamp black and boiled linseed oil. If mixed thin you can apply it with a brush. A much quicker process is to take a piece of old canvas, as much as a man can conveniently hold in his hand, and dip it into the paint and rub it well into the pipes. This is rather a dirty plan, and some might object to it on that account, but the work can be done quite as well as with a brush; besides, the under sides of the pipes cannot always be reached with a brush.

Grubs at Roots of Ferns (Wombourne).—The insects sent are the larvæ of the red-legged garden weevil (*Otiorhynchus tenebrius*), a troublesome pest some seasons, as they feed upon the roots of many fruit trees, vegetables, and other plants from the autumn to spring, and their presence is often not discovered till the mischief is done. They are now nearly full grown, and about April they become pupæ, and the weevils or beetles emerge during early summer, and also do harm by attacking the buds and young shoots of various trees and shrubs. Their presence would certainly account for the appearance of the Ferns.

Lilium auratum Bulbs (Reader).—Though fresh sound bulbs often answer if potted at once, or planted as soon as the ground is in suitable condition, those which are more or less shrivelled as often fail to produce satisfactory plants. It is an excellent plan to place fresh cocoa-nut fibre in boxes or flat baskets, and in this press the bulbs a third to half their depth, and there let them remain in the potting shed for a few weeks, or until incipient roots are visible at the base of the bulbs, then if they are potted, or planted in a suitable medium, good growth may be expected. After potting it is a good plan to plunge the pots over their rims in cocoa-nut fibre refuse, or other light damp material, in a frame, or even outdoors if the pots are stood on a base impervious to worms, and drenching rains are thrown off the plunging bed by a shutter or other means.

Fowl Manure for Fruit Trees (D. H.).—Fowl manure is an excellent fertilizer, containing the elements needed by plants as food; it is also powerful, being four times richer in nitrogen than are horse droppings, and contains double the amount these comprise of potash. It should be kept dry and thin so as not to heat. To facilitate application it may be mixed with an equal quantity of dry wood ashes, incorporating thoroughly and keeping it in a dry place. For Vines and Peach trees it may be applied at the rate of a couple of good handfuls per square yard. For indoor uses it would be advisable to obtain the fowl manure as pure as possible and mix it with dry wood ashes in equal quantities, and apply at the rate named at fortnightly intervals during the growth and swelling of the crops. Outdoors it may be applied without the wood ashes at about one-fourth of the rate of horse droppings or stable manure, either for fruit trees or vegetable crops.

Names of Fruits.—Notice.—We have pleasure in naming good typical fruits (when the names are discoverable) for the convenience of regular subscribers, who are the growers of such fruit, and not collectors of specimens from non-subscribers. This latter procedure is wholly irregular, and we trust that none of our readers will allow themselves to be made the mediums in infringing our rules. Special attention is directed to the following decision, the object of which is to discourage the growth of inferior and promote the culture of superior varieties. In consequence of the large number of worthless Apples and Pears sent to this office to be named, it has been decided to name only specimens and varieties of approved merit, and to reject the inferior, which are not worth sending or growing. The names and addresses of senders of fruit to be named must in all cases be enclosed with the specimens, whether letters referring to the fruit are sent by post or not. The names are not necessarily required for publication, initials sufficing for that. Only six specimens can be named at once, and any

beyond that number cannot be preserved. They should be sent on the first indication of change towards ripening. Dessert Pears cannot be named in a hard green state. (J. H.).—1, Beurré Clairgeau; 2, not known and no value. (H. P.).—Franklin's Golden Pippin. (D. L.).—1, Braddick's Nonpareil; 2, Scarlet Nonpareil; 3, Court of Wick; 4, Bramley's Seedling.

Names of Plants.—We only undertake to name species of plants, not varieties that have originated from seed and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in firm boxes. Slightly damp moss, soft green grass or leaves form the best packing, dry wool the worst. Not more than six specimens can be named at once, and the numbers should be visible without untying the ligatures, it being often difficult to separate them when the paper is damp. (Reader).—1, Maxillaria picta; 2, a Dendrobium, but we are doubtful as to the specific name; send fresh specimen, which shall have careful examination; 3, Agapanthus umbellatus variegatus; 4, Tradescantia discolor. (S. H.).—Zygopetalum intermedium. (D. B.).—1, Hoya carnea; 2, Dracæna indivisa.

COVENT GARDEN MARKET.—JANUARY 31ST.

BUSINESS still quiet, with supplies falling off.

FRUIT.

			s.	d.	s.	d.				s.	d.	s.	d.		
Apples, per bushel	2	6	to	9	0	Peaches, per doz.	0	0	to	0	0
Cobs	40	0	42	6	Plums, per half sieve	..	..	0	0	0	0		
Grapes per lb.	0	6	2	0	St. Michael Pines, each	..	..	2	0	6	0		
Lemons, case	10	0	15	0									

VEGETABLES.

		s.	d.	s.	d.			s.	d.	s.	d.	
Beans, Kidney, per lb.	..	1	0	to	1	6	Mustard and Oress, punnet	0	2	to	0	0
Beet, Red, dozen	..	1	0		0	0	Onions, bushel	..	3	6	4	0
Carrots, bunch	..	0	3		0	4	Parsley, dozen bunches	..	2	0	3	0
Cauliflowers, dozen	..	2	0		3	0	Parsnips, dozen	..	1	0	0	0
Celery, bundle	..	1	0		1	3	Potatoes, per cwt.	..	2	0	4	0
Coleworts, dozen bunches		2	0		4	0	Salsafy, bundle	..	1	0	1	5
Cucumbers, dozen	..	2	0		5	0	Scorzonera, bundle	..	1	6	0	0
Endive, dozen	..	1	3		1	6	Seakale, per basket	..	1	3	1	6
Herbs, bunch	..	0	3		0	0	Shallots, per lb.	..	0	3	0	0
Leeks, bunch	..	0	2		0	0	Spinach, bushel	..	8	0	0	0
Lettuce, dozen	..	0	9		1	0	Tomatoes, per lb.	..	0	3	0	7
Mushrooms, punnet	..	0	9		1	0	Turnips, bunch	..	0	3	0	0

AVERAGE WHOLESALE PRICES.—OUT FLOWERS.

Orchid Blooms in variety.

	s.	d.	s.	d.		s.	d.	s.	d.	
Arum Lilies, 12 blooms ..	4	0	to	6	0	Orchids, per dozen blooms	3	0	to 12	0
Azalea, dozen sprays..	0	9	1	0	Pelargoniums, 12 bunches	6	0	12	0	
Bouvardias, bunch ..	0	6	1	0	Pelargoniums, scarlet, doz.					
Camellias, dozen blooms ..	0	9	2	0	bunches ..	4	0	9	0	
Carnations, 12 blooms ..	2	0	4	0	Poinsettia, doz. blooms ..	4	0	8	0	
Chrysanthemums, dozen					Primula (double), dozen					
bunches	2	0	6	0	sprays	0	6	1	0	
Chrysanthemums, dozen					Pyrethrum, dozen bunches	2	0	4	0	
blossoms	1	0	4	0	Roses (indoor), dozen ..	1	0	2	0	
Eucharis, dozen	4	0	6	0	„ Tea, white, dozen ..	1	0	3	0	
Gardenias, per dozen ..	4	0	6	0	„ Yellow, dozen ..	2	0	4	0	
Hyacinths, dozen spikes ..	3	0	5	0	Roses, Safrano (French),					
Hyacinth, Roman, dozen					per dozen	1	6	3	0	
sprays	0	6	0	9	Roses, Safrano (French),					
Lilac (French) per bunch	3	6	6	0	per 100	6	0	10	0	
Lilies of the Valley, dozen					Roses, Safrano (English),					
sprays	0	9	2	0	per dozen	2	0	3	0	
Lilium longiflorum, per					Roses, Maréchal Neil, per					
dozen	6	0	12	0	dozen	3	0	6	0	
Maidenhair Fern, dozen					Tuberose, 12 blooms..	0	4	0	6	
bunches	4	0	6	0	Tulips, dozen blooms ..	0	9	2	0	
Marguerites, 12 bunches ..	2	0	4	0	Violets, Parme (French),					
Mignonette, 12 bunches ..	3	0	6	0	per bunch	3	0	5	0	
Narciss, Yellow (French),					Violets, Ozar (French), per					
dozen bunches	2	0	4	0	bunch	2	6	3	0	
Narciss, White (French),					Violets (English), dozen					
dozen bunches	2	0	4	0	bunches	1	6	2	0	

PLANTS IN POTS.

	s.	d.	s.	d.		s.	d.	s.	d.	
Arbor Vitæ (golden) dozen	6	0	to	12	0	Foliage plants, var., each..	2	0	to 10	0
Aspidistra, per dozen	18	0	36	0	Hyacinths, per dozen	6	0	9	0	
Aspidistra, specimen plant	5	0	10	6	Hyacinth, Roman, dozen					
Azaleas, per dozen	24	0	42	0	pots	9	0	12	0	
Chrysanthemums, per doz.	4	0	9	0	Lilium Harrissi, per dozen	12	0	24	0	
Dracæna terminalis, per					Lycopodiums, per dozen ..	3	0	4	0	
dozen..	18	0	42	0	Marguerite Daisy, dozen ..	6	0	12	0	
Dracæna viridis, dozen ..	9	0	24	0	Mignouette, per doz...	6	0	9	0	
Ericas, per dozen ..	9	0	24	0	Myrtles, dozen ..	6	0	9	0	
Euonymus, var., dozen	6	0	18	0	Palms, in var., each ..	1	0	15	0	
Evergreens, in var., dozen	6	0	24	0	„ (specimens) ..	21	0	63	0	
Ferns, in variety, dozen ..	4	0	18	0	Poinsettia, per dozen..	12	0	15	0	
Ferns (small) per hundred	4	0	6	0	Solanums, per dozen..	9	0	12	0	
Ficus elastica, each ..	1	0	7	6	Tulips, per dozen ..	6	0	9	0	



MIXED FARMING.

It was our intention this week to commence a series of articles upon profitable farming under the depression, but a very casual inspection of the cattle at several midland grass farms

has brought conviction of the urgent need for immediate reform both in the crop and stock of such holdings. For all graziers having nothing but poor pasture and poor stock the situation is indeed critical. No roots, straw, Cabbage, Kale, or silage, and very little hay; straw up to £4 15s. and £5 per ton; Canadian hay, £6 10s.; stover, £8; and meadow hay, £8 10s. per ton.

Stock-feeding under such conditions has on hundreds of holdings fallen to the scattering on pasture of a few handfuls of oat straw daily, and the condition of both cows and store cattle is so low that losses from exhaustion mount up daily. The mild weather has been greatly in favour of the stock, but if we have a cold wet February there will be a fearful bill of mortality. Bare drought-stricken pasture afforded so little food to the poor beasts last summer and autumn that they were in wretched plight at the beginning of winter; so many died outright during the brief spell of cold weather in the first week of January that it is certain a recurrence of it during the next few weeks would cause even more serious losses. The condition of yearlings is especially deplorable. We saw many of them so weak as to be hardly able to walk; they were cowering under any available shelter, such as a hedge or the side of a building, but always out in the open. There was really very little to choose between them and the cows, and we were not at all surprised to hear of the sale of a cow for 35s., and of three others at £2 apiece. To purchase such animals at all was upon the face of it a rash proceeding, but horns, hide, tallow, and bones possess a certain value. There is always a market for them, and that no doubt was their destination.

To the long drought of last year is this lamentable crisis in dairy farming attributable, say the farmers. It is true that the drought brought the crisis, but it neither made the pastures poor nor the stock inferior. Both faults had been in existence ever since the land was laid down to grass, as had also that other mistake of laying every acre down to permanent pasture. Therein lay the risk; it has always been in evidence, and though the dairy farmer's position is more serious than heretofore it is by no means the first time he has been in difficulties from drought; it has been just a matter of degrees according to its season and duration. He has been practically for many years on the verge of such difficulties, if not of ruin, making no effort so to improve his pasture, to modify his practice in the management of land and live stock, as to add to his prosperity and to combat adverse seasons successfully.

If he would do better in future with the land now is the time to begin, and we advise him not to attempt too much at once. First of all consider carefully what amount of corn, straw, roots, and green crops other than permanent pasture is required, and for this rest content with ploughing a suitable portion of the pasture with a deep furrow well turned. Sow this entirely with Black Tartarian Oats, not drilled, but broadcast. Sow with the Oats 1½ cwt. nitrat of soda, 2 cwt. superphosphate, and 3 cwt. of salt; harrow seed and manure well in with light harrows, taking especial care not to pull over the sods. This will afford an ample store of corn and straw for another winter, and the following season the land could be apportioned for other crops as well as corn. Just think of it! Never was green Maize more useful; in deep rich soil it made growth of marvellous vigour; sown early in June, germination and the upspringing of the plants followed quickly, and the crop was ready to begin upon much sooner than usual. Would not grass farmers liked to have carted some of it out upon their bare pastures? Let them resolve to do so, also to follow the Maize with Cabbage and Thousand-headed Kale, to have a moderate number of roots, to have a few acres of mixed seeds or Italian Rye Grass, Lucerne, Tares, Sainfoin, any or all of them either to use

green or for ensilage. Then for early use in the spring there should always be an ample supply of Rye, nor should the special value of Winter Oats be forgotten. These are the crops that enter into a scheme of mixed dairy farming. In conjunction with them we must have permanent pasture under thorough cultivation, to which our next article will be devoted.

WORK ON THE HOME FARM.

During frosty weather do not allow pregnant ewes or those with lambs to have either roots or Cabbages. Many a valuable ewe has been lost through eating frozen roots and green food. Shepherds often have an erroneous idea that such fare is necessary for the promotion of a free flow of milk. It is really a wholesome change of diet which may be dispensed with at any time if only plenty of nutritious dry food is used, such as crushed oats, bran, and chaff, with Pea straw uncut in the racks. As the lambs begin eating, let them have some Makinder's lamb food in troughs which the ewes cannot get at if you would have them strong or fat early. This attention to food is of the utmost importance, and remember that frozen food is not only hurtful to the ewes, but it affects their milk so much as frequently to cause diarrhoea in the lambs, which carries them off quickly.

The mild weather has caused the Rye to grow so fast that, at a pinch, we might have folds upon it for ewes and lambs at once. This is unnecessary, and it will be much more useful for the flock later on. It is, nevertheless, quite worth while having such a useful auxiliary green crop to turn to at will. The weather has also been favourable for cows and store cattle. We always feed well, as being true economy in stock management. But during severe weather extra care is required for beasts in open yards; in covered yards the influence of changes of weather are felt much less. Calves and yearlings are kept in warm snug quarters, never going out at all during the winter. With due care in feeding they thrive apace, have no tendency to husk, and always in sleek condition. We insist upon clean coats, which is easily managed by daily attention. Dry filth on the coats of cattle, young or old, is an outcome of carelessness which must not be let pass unnoticed. A good cowman or stockman is as careful of the appearance of the animals under his charge as he is of his own dress, and cleanliness always tends to promote health.

OUR LETTER BOX.

Feeding Poultry (E. H.).—Variety in the bill of fare is the secret of successful poultry keeping. For breakfast ring the changes on the following soft foods which are all good: Spratts, oatmeal, barleymeal, Liverine and pollards; scald these with boiling water into a stiff crumbly mass and give hot. Instead of cayenne a pinch of ordinary black pepper will do the fowls good in very cold weather, say twice or thrice a week. Before they go to roost give a feed of hard grain, such as wheat, oats and barley alternately, with now and then a feed of sound French buckwheat. If the birds are in confined runs they should have at mid-day a supply of fresh sweet green food. Any scraps left from the table should be chopped up finely and mixed with soft food for breakfast. Give only at each meal as much as the birds eat up greedily.

METEOROLOGICAL OBSERVATIONS.

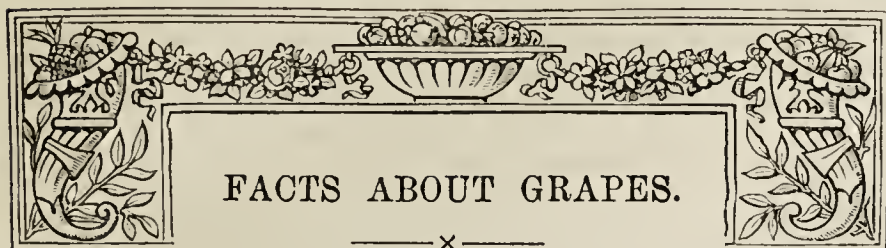
CAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude, 111 feet.

DATE.		9 A.M.					IN THE DAY.				Rain.
1894. January.		Barometer at 32°, and Sea Level.	Hygrometer.		Direc- tion of Wind.	Temp. of soil at 1 foot.	Shade Tem- peraturc.		Radiation Temperature		
			Dry.	Wet.			Max.	Min.	In Sun.	On Grass.	
		Inchs.	deg.	deg.		deg.	deg.	deg.	deg.	Inchs.	
Sunday	.. 21	29.968	42.4	40.9	S.W.	42.0	48.7	39.0	53.8	34.0	0.012
Monday	.. 22	29.612	46.7	45.2	S.	42.1	47.7	42.4	52.8	38.9	0.341
Tuesday	.. 23	29.798	33.9	32.0	N.	41.4	49.9	31.9	69.9	27.2	—
Wednesday	24	30.224	28.2	27.3	S.E.	39.1	47.0	24.1	58.9	18.8	0.053
Thursday	.. 25	29.904	46.7	46.1	S.W.	39.1	48.2	28.1	5.4	24.0	0.281
Friday	.. 26	29.670	37.9	35.9	N.W.	40.9	49.2	37.1	72.9	33.2	0.010
Saturday	.. 27	29.789	48.9	45.9	S.W.	40.1	52.0	37.2	76.8	31.1	0.102
		29.852	40.7	39.0		40.7	47.5	34.3	62.2	29.6	0.799

REMARKS.

- 21st.—Fine morning with some sunshine; generally overcast after.
 22nd.—Dull early; continuous rain from 10.30 A.M. to 6 P.M.; overcast evening.
 23rd.—Almost cloudless throughout, except for about half an hour at 3 P.M.
 24th.—Bright sunshine till noon; fair afternoon and evening.
 25th.—Rain between 4 and 6 A.M.; overcast and drizzly all morning; rain from 2 P.M. to 4 P.M., and damp and showery till midnight.
 26th.—Showers early; unbroken sunshine throughout the day; a little cloud in evening, and showers at 11 P.M.
 27th.—Sunshine alternating with sprinkles of rain throughout the day; heavy shower at 10 P.M.
 Although rain fell on six days out of the seven, there was much bright sunshine and pleasant weather. Temperature above the average.—G. J. SYMONS.



FACTS ABOUT GRAPES.

THERE is, perhaps, not much that is fresh to be said about the different varieties of Grapes most generally cultivated, but we live and learn, and no gardener can say he has not added something to his stock of information every year. Concealing this newly acquired knowledge is a selfish course that luckily in these days of unlocked potting sheds does not commend itself to the majority of gardeners, and by ventilating ideas some useful knowledge may be imparted, and perhaps even more be gained by those who first put their pens to paper on any subject. Where, therefore, my views upon and experiences with the Grapes to be severally commented upon do not exactly agree with that of others who, may be, take the trouble to read what I communicate, it is to be hoped there will be no hesitation in giving expression to these conflicting opinions in the pages of the *Journal of Horticulture*. Naturally, I prefer being supported rather than opposed by others, but criticism, however adverse, if it is courteous and for the object of imparting or eliciting information, never yet ruffled my temper, and I trust never will; but criticism intended to cause pain is contemptible.

The variety of Grape usually coming uppermost in discussion is the ever-popular Black Hamburgh. Of this there are undoubtedly several forms in cultivation. Some are very much better in every way than others, and of this fact we have unmistakeable evidence in a vinery under my charge. In this house there are three quite distinct forms, and only one of them worth retaining. This latter is of somewhat stout growth, with broad plain leaves, green footstalks, and the young wood is generally green. The bunches mostly produced are of good size and well formed, while the berries are large, frequently "hammered," colour satisfactorily, very little shanking ever taking place, quality and keeping property being equally good. Another form differs from that just described principally in its tendency to root more deeply than desirable. Unless this is prevented by occasional root-lifting rank top growth, loose bunches, and shanking of the berries soon result. Curiously enough, it proves an excellent stock for Gros Maroc without any necessity for special treatment at the roots. The third form is not so robust as the two preceding, the young wood is purplish green, the footstalks of the leaves smaller, the leaves of medium size and more divided, while both bunches and berries are also comparatively small and deficient in bloom. Doubtless these are only some of the variations to be met with, and are perhaps owing to a general merging of the Frankenthals, Mill Hill Hamburgh, Champion Hamburgh, Dutch Hamburgh, and such like, all, whether rightly or wrongly, under one distinctive name—Black Hamburgh. Perhaps they only differed slightly, if at all, in their general characteristics; but, all the same, it is unfortunate more of the inferior forms were not long ago completely weeded out. Very much may depend upon circumstances and the treatment given, but I still think some forms pay for good cultivation better than others. I do not, however, go so far as to assert that there are any true Red Hamburgs, although there are vast numbers of bunches annually grown that never get much beyond a dull red colour. Whether the berries shall be red, dark red, reddish black, or purplish black largely depends upon the cultivator.

Overcropping is the one great stumblingblock with many of us, and an undue haste in ripening is another cause of imperfect colouring. After a fairly long experience in the cultivation of

this Grape, I have arrived at the conclusion that it is scarcely possible to estimate just how many bunches other people's Vines are capable of ripening to perfection. What in one case might prove too many would perhaps be considered a very moderate crop in another, and every grower should discover for himself exactly how many bunches or how many pounds of Grapes his rods ought to carry each season. If ten bunches or 15 lbs. of Grapes failed to colour properly on a rod 15 feet long, then fewer should be left hanging the next season. One bunch too many or even grouping the bunches together somewhat may have the effect of taking just a little too much of the Vine for the colouring of all to be perfect. It is all very well to argue that an extra amount of feeding or an early removal of some of the bunches after colouring is well advanced would meet the case. My contention is that Vines will not be fed so much as many people seem to think possible. They are capable of absorbing just so much, and that nothing very startling in amount, and no more, excessive supplies being wasteful and may be injurious to either border or roots. If the Black Hamburgh roots can be kept well up to the surface, and annually given a little fresh loamy compost to ramble in, not much manure is needed.

Fire heat freely applied during the ripening period undoubtedly greatly improves the quality of the Grape under notice, and that accounts for the difference sometimes observable between some only moderately well coloured and others quite black, but not so richly flavoured. High temperatures, especially during the night, hasten the formation of saccharine matter, but there is the risk to be run of this taking place at the expense of colour. In order to be certain of colouring the berries well, fresh air must play freely about them while it is taking place, and the value of the chink of front air during the night, which Mr. D. Thomson first brought to my notice, cannot well be over-estimated. If, therefore, extra well coloured bunches or such as will win prizes are desired, there must not be too many of them. Better be content with one first prize than aim at gaining three and taking none—an old experience of mine—and, further, good time for ripening must be allowed.

Now comes an anomaly. At the risk of being thought egotistical I will mention having repeatedly shown Black Hamburgh Grapes that some of our best West of England gardeners have found it no easy matter to surpass, yet these have nearly always been cut from a rod in a Muscat house. When I have asserted as much before at some of those little gatherings of friendly rivals, the "other eye" has been winked more than once, though this only went to prove the correctness of the old saying that "Truth is sometimes stranger than fiction." It happened in this way. In order to quickly furnish the house with rods of Muscat Grapes a strong old Vine of Black Hamburgh was brought through from the next compartment and trained along the front with a view to inarching and bottle-grafting Muscats on it. This was done, and the old Vine also allowed to produce several bunches. The grafting and inarching was a success, but the following season the Hamburgh portion of the Vine did so well and the Muscat portion so badly (the why and the wherefore will transpire in another paper) that it was eventually decided to cut away the latter and take good care of the old Hamburgh. In addition to the front of a house being the coolest part, I also took the precaution of giving a little front air every night during the colouring period, this having the effect of laying on both colour and bloom very surely and well. It should be noted that this house is heated by a flue, the Hamburgh Vine running along the front immediately over and only 3 feet away from the hottest end. Naturally, red spider proves rather troublesome, but sulphur and sulphur fumes usually check the spread of this, and what harm this pest works is more than compensated for in the direction of superior ripening of the wood by the extra heat to which it is subjected. Evidently no variety better repays for having its wood thoroughly well ripened by the aid of

fire heat. Since the Vine was brought through from the Ham-burgh house a young rod has been led up from it in the latter, but not being anywhere near a flue or given the benefit of much fire heat the wood does not ripen so well, and the bunches are looser and smaller accordingly. The old rod over the flue, and it is a very old one, its exact age not being known, invariably produces several larger bunches than I care to reserve, others nearer 2 lbs. in weight best answering my purpose.—W. IGGULDEN.

WEEDS AND THEIR USES.

A READER of the *Journal of Horticulture* remarked to me the other day, "I was greatly pleased to read certain remarks concerning root action—really some talk about tree physiology, because anything in that way presents pleasant thoughtful matter in place of the eternal talk about common culture, with which everybody now is so familiar." Perhaps my friend had a taste a little above the common order, at least he seemed to convey the impression that he thought garden writing should deal now a little less with mere routine, and go back somewhat to first causes. I read Mr. Abbey's article on "Fertilizers for Small Fruits" (page 83) with a good deal of pleasure, just because it afforded room for criticism and for thought. It deals with operating causes rather than mere effects, and it carries the mind of the reader somewhat deeper into garden science than commonly results from ordinary matter.

I have found much room for reflection in the reference Mr. Abbey makes to weeds as manure, and he seems almost to approve of the method of a small fruit grower who is referred to, which consisted in allowing annual weeds to grow freely amongst his bushes and then digging them in as manure. Apart from the fact that we have always been taught to regard weeds in gardens like dirt, as matter out of place, and therefore to be speedily removed, we find here a positive suggestion that Nature through weed production is quite capable of supplying her own necessities if the weed crop be in due course buried in the soil, when it again becomes plant food. Assuming this to be so, and it will be difficult to doubt it so far as the weed crop itself is concerned, yet can it be made instrumental in furnishing the required fertilisers to Gooseberry and Currant bushes, when there must be in the weeds a great deficiency of the essential elements of bush wood and fruit?

So far as the weed crop is concerned nothing is taken from it, not even the seed, therefore all that it has taken from the soil is returned, and with it, no doubt, added nitrogen obtained from the atmosphere during the period of growth. In the case of the fruit bushes which are grown to produce fruit, all the products of this sort are removed, and nothing in exchange is replaced. It is, therefore, quite incomprehensible, I may say impossible, that the digging in of an annual crop of weeds can fully fertilise or manure a breadth of bush fruits. But this mention of weeds as manure, and the only manure, is based on the assumption that we always have wet seasons, productive of a huge weed growth. That is, of course, a false assumption, as more often our summers and autumns are too dry to favour this development, and when that is so how goes on the bushes for their annual dressing of weed manure? Mr. Abbey says that the whole thing is a puzzle. All I can say is that our treatment of weeds has hitherto been absolutely wrong if all this be true.

If I venture to think that the grower in question has indulged in a little garden fiction for the sake of giving some mystification, I do not think I shall be far wrong. What is after all our common estimate of weeds? It is that they are not only intolerable nuisances, but great robbers, and to tolerate them is to do so at the expense of useful crops. No one, however, will, I presume, advocate the growing of a crop of weeds as a manure dressing amidst any ordinary garden crop, that would of course be suicidal; for that reason it is not worth while to attempt to controvert what no one disputes. A very interesting question in relation to the use of weeds arises, however, in connection with uncropped ground. I remember having a long time since heard some old gardeners arguing the point, and they generally agreed that land was more fully aerated in the winter by carrying a green crop even of Chickweed or Groundsel than when remaining entirely uncropped. It is a common belief that by freely exposing soils to the air by rough digging or ridging this aerating is most fully performed. That may be so, but then there is the undoubted fact that green leafage of any description operating as plant lungs absorbs nitrogen from the air, and not only conveys it into the soil, but also by appropriating much of it enables a good proportion to be available for plant food of garden crops if buried in the soil as manure early in the spring. But then if it be manurially both wiser and economical

to have all otherwise vacant pieces of ground carrying a temporary green crop, it would be far wiser to sow Tares or hard Peas, or Mustard, rather than to allow some chance weed crop to grow, as weeds always have an untidy, neglectful aspect, and in no case do credit to the gardener.

Here we have opened a subject for discussion which merits the closest attention. We may well invite opinions as to the special value of green crops during the winter for spring burying on both stiff soils and on light soils, and also as to whether stiff soils are best pulverised and aerated when thus carrying a green crop or when lying fallow. Of course, trenching must leave ground fallow if it be done in the winter, but still trenching is by no means an annual necessity. I would add that for green cropping for manuring both Rye and winter Oats are excellent, though perhaps nothing is better than a good crop of Tares.—A. D.

MALMAISON CARNATIONS IN WINTER AND SPRING.

As I sat down to write a few remarks on this subject I intended to unburden my mind of the melancholy reflection, how unfortunate it is that by some inscrutable law of Nature the most beautiful flowers and the finest fruits are usually the most difficult to produce. Upon looking at the matter in a more philosophical manner, however, I have come to the conclusion that my earlier reflections were altogether misplaced, for what can be more beautiful than the Lily of the Valley of our woods, the Dog Rose of our hedges, or the easily grown Roses of our gardens, and what more wholesome and appetising than some of our hardy fruits? Does not the true solution of the problem lie in the fact that when a beautiful flower happens to be difficult to produce, it is only within the reach of the few, and must therefore be classed as a choice one?

Let it not be understood by the foregoing remarks that I wish to write disparagingly of the intrinsic merits of *Souvenir de la Malmaison* Carnations. On the contrary, I think few flowers can vie with them in delicateness of colour or deliciousness of perfume. Still, I fancy it cannot be denied that the great popularity they have so long enjoyed among the affluent is to some extent due to the skill required in their culture, which effectually prevents their becoming common. When once these Carnations get into an unhealthy condition few plants are more difficult to restore to perfect health again, but when their peculiarities are understood, and due care is exercised in attending to their requirements, it is surprising how well they thrive. It is when mistakes are made in their culture that they become a prey to eelworms and fungi, which are so difficult to eradicate. Over-watering at the roots, and growing in too dry an atmosphere, are mistakes which perhaps more than all others militate against success in their culture. Should the soil become wet and sour, especially in the winter, the plants invariably decay at the collar. I am convinced that if the syringe were used more, and the waterpot less, we should hear fewer complaints about unhealthy *Malmaison* Carnations. Many gardeners seem to have a horror of damping the stages and floors of cool houses in the winter, even when a considerable amount of fire heat has to be employed to keep out frost. In houses filled entirely with Zonal Pelargoniums and other bedding plants which delight in a dry atmosphere, the maintenance of these conditions is without doubt the right course to pursue, but to apply the same treatment indiscriminately to all plants which require only a greenhouse temperature is a mistake.

When *Souvenir de la Malmaison* Carnations are grown in houses having slate or wood stages, with no absorbent materials, such as shell or coal ashes, placed upon them, the atmosphere surrounding the plants frequently becomes too dry to suit them. Even in the winter, whenever the days are clear and open, or when fire heat has been employed to keep out frost, I find the plants are greatly benefited by damping between the pots with a syringe at mid-day, and occasionally while the sun is shining. This course of treatment enables the cultivator to be very sparing in the application of water at the roots, and does much towards keeping the soil in a sweet condition till the roots have permeated it. Over-watering is an error into which young men are frequently drawn in this way. After a period of dull or wet days the sun perhaps bursts out quite brightly for a few hours; this rapidly dries the surface soil, and dispels atmospheric moisture as well; under such circumstances the plants look distressed, and the temptation to water at the roots is felt with great force. Damping the stages and a slight syringing given to the plants will, under such conditions, be found far more satisfactory than applying water at the roots. A golden rule in the management of all plants is, that whenever they show signs of distress, if there is a doubt as to whether or not they require water at the root, syringe the foliage and damp around the

pots. As the days lengthen and become brighter a daily syringing will be found beneficial, except in dull or wet weather.

Artificial manures should be used with great caution, as I know of no plants which show the ill effects of an overdose so quickly. As a stimulant I believe nothing equals weak soot water, given whenever the plants require watering, after roots have become plentiful. The frequent stirring of the surface soil, to keep it in a sweet condition and admit the food of the atmosphere, is also an important factor in the successful culture of these charming flowers.—H. DUNKIN.



CYPRIPEDIUM ADRASTUS.

WHEN this beautiful *Cypripedium* was exhibited at the Drill Hall, Westminster, on January 16th by Messrs. J. Veitch & Sons, Royal Exotic Nurseries, Chelsea, it attracted more than ordinary attention on account of its distinctiveness. It is the result of a cross between *C. leeanum* and *C. villosum* Boxalli, the latter being the pollen-bearing parent. The upper sepal is principally white, green towards the base, the whole being heavily spotted purplish-brown. The petals are shiny rich red-brown on a yellowish-green, the lip being short, of a glazed purple hue, mottled yellow. The illustration (fig. 16) represents a flower borne by the plant exhibited by Messrs. Veitch & Sons, and for which a first-class certificate was awarded.

PLEUROTHALLIS UNISTRIATA.

According to the "Kew Bulletin" this is a very small species, belonging to the section *Apodæ cæspitosæ*, which has flowered in the Kew collection on several occasions. It is very near the Guatemalan *P. marginata*, Lindl., which, however, has rather larger, more distant flowers, and the lateral sepals united to their middle. The flowers are semi-pellucid white; the petals each with a purple mid-nerve, and some similar colour on the lip. As the flowers become old the colour diffuses itself through the petals and lip.

SCAPHOSEPALUM MICRODACTYLUM.

A singular little species, which flowered at Kew during 1890, and again in October of the last year. It is very distinct from every other, though perhaps nearest *S. ochthodes*, Pfitzer. The flowers, it is stated in the "Kew Bulletin," are light greenish yellow except the upper half of the dorsal sepal, which is suffused with light purple brown. It is characterised by the very short tail of the lateral sepals, scarcely half a line in length, in allusion to which the name is given.

PAPHINIA GRANDIFLORA.

Paphinia grandiflora, generally known as *P. grandis*, is the largest flowered and handsomest of a small genus of Orchids, closely allied to *Lycaste*; indeed, it is included in that genus by Bentham and Hooker. Although introduced from Brazil and flowered in England ten years ago, this species has remained rare until recently. Its flowers, says the American "Garden and Forest," are 6 inches in diameter, the segments being ovate-lanceolate and coloured yellow, with blotches and bands of deep brown purple; the lip is narrow, fleshy, and crowned with a tuft of whitish shaggy hairs. The size of the flower is out of all proportion to the size of the plant, which is scarcely a foot high and has egg-shaped pseudo-bulbs, bearing each one or two thin lanceolate green leaves. *Paphinias* are as refractory as *Phalænopsis*, and are, therefore, plants only for the patient and watchful cultivator possessed of a moist house. They require a decided dry rest after growth.

SOWING SEEDS.

SEED time has ever been a period of hope and interest in all countries throughout the civilised world. Poets of ancient and modern times have described in some of their choicest language the power of hope and the hopefulness of seed time. Illustrious divines have, when delivering some weighty oration to their wavering flocks, exhorted them to copy the firm faith and sanguine hope of the pious husbandman. This instinctive feeling of hopefulness which reigns within our breasts at seed time, unless accompanied by good work as well, may prove a delusion and a snare, for although loose methods of sowing seeds may sometimes be followed by good results, they are more often the precursor of

disastrous failure. It is only when we have done all that we can do by following the best methods of seed-sowing and subsequent culture that we are likely to realise fully the sanguine hopes which come with the time of sowing seeds.

Although it is necessary to exercise great care in preparing the soil, and in sowing seeds of all descriptions, those which are sown under glass perhaps show the ill effects of wrong practice or neglect to a greater extent than others, because many of them are so exceedingly small as to resemble dust; and, moreover, light, heat, air, and water, the primary elements necessary to ensure good progress, as so thoroughly under our control that attention or neglect speedily show their inevitable results. I will therefore confine my remarks in this article to the practice I have found most successful in seed-sowing under glass. So many failures result from sowing seeds in soil infested with minute insects that I have for some years followed the plan of thoroughly drying in a stove-hole all that is used for that purpose. Maiden loam, leaf soil, and peat are easily subjected to the same process; and after being



FIG. 16.—CYPRIPEDIUM ADRASTUS.

thoroughly dried, so that no animal life can be present, these materials are slightly moistened, turned over, and left for a day before being used.

When preparing the compost I begin by sifting equal parts of loam and leaf soil or peat through the half-inch sieve. A good amount of finely crushed charcoal is next passed through the quarter-inch one, plenty of sharp sand is added, and the whole thoroughly mixed together. Half of this is then sifted through the quarter-inch sieve, and a small portion again passed through one with still finer meshes. In this way soils of three different degrees of fineness are prepared, and collectively they supply materials in which almost any seeds, from those of the dust-like *Begonia* to the giant *Sunflower*, may be inserted with good prospect of success.

Pans or shallow boxes are perhaps the most suitable receptacles for sowing the seeds in; the former I prefer for any small or choice ones, and the latter for the more easily grown half-hardy annuals, of which considerable numbers are usually required. In all instances good drainage is absolutely necessary. Three sizes of crocks should be used, finishing off with the smallest on the surface, which ought not to be larger than peas. Soil an inch in depth is ample for small seeds, and an extra half inch for larger ones; there is then but little danger of its becoming sour before the young seedlings are pricked out. Over the crocks I place a thin layer of moss, through which the water percolates evenly. After experimenting with many substances I consider moss the most suitable for the purpose; a layer from the coarsest heap of prepared soil being placed over this, and pressed moderately firm, should be followed by another layer, which has been passed

through the quarter-inch sieve; this being pressed to a smooth surface is then ready for sowing any but the very smallest seeds upon.

Seeds of Asters, Stocks, Marguerites, Cyclamens, Dianthus, Pyrethrums, *Nemesia strumosa*, *Nicotiana affinis*, and many others of a like nature, if scattered thinly and evenly upon soil thus prepared, only require to be just covered with the fine soil—which should be pressed gently with a board—to complete the operation. A moderate watering through a fine rose should then be given, some squares of glass placed over the pans or boxes, and a covering of paper or moss put on the glass. Vineries, forcing houses, or frames placed over hotbeds, are excellent positions in which to place newly sown seeds of the above descriptions.

Begonias, Calceolarias, and Lobelias require somewhat different treatment. In addition to the preparations already described, some of the finest of the three heaps of prepared soil should be pressed upon the surface, and the whole of the material moistened before the seeds are sown. An excellent way to do this is to hold the pan in warm water up to the rim till the water rises from the holes at the bottom, and gradually moistens the soil up to the surface. As soon as superfluous water has drained away, if a mixture of powdered charcoal and sharp sand is sprinkled upon the soil it will do much towards keeping it sweet. Scatter the seeds evenly on the surface, place a layer of moss round the inside rim of the pan, and let it rise slightly above it, so that when a square of glass is laid over the whole the inside is fairly air-tight. This prevents the soil drying, and it is important that water is not again required till the seeds have germinated. The Begonias and Lobelias should, if possible, be placed in a forcing or propagating house, where there is a good bottom heat, the Calceolarias under a hand-light behind a north wall (of course I refer to herbaceous Calceolarias, which are sown in the summer), shade in each instance being given till the seeds have germinated. Primulas and Cinerarias will succeed well under almost the same conditions, with the exception that the surface soil need not be quite so fine, and in the case of the latter I prefer to cover the seeds.

Seeds of *Acacia lophantha*, *Ricinus*, *Grevillea robusta*, Maize, and others having a similarly hard testa ought to be soaked in water for twenty-four hours before sowing. A good method of sowing is to dibble them in the soil an inch asunder; they then feel the check of transplanting but little. Sow thinly is perhaps a somewhat hackneyed term, but it is also one which should be constantly remembered and acted upon by all who aim at producing sturdy plants and abundant crops.—D. W.

(To be continued.)

DECORATIVE BRITISH FERNS.

THE LADY FERN.

(Continued from page 33.)

THE Lady Fern (*Athyrium filix-femina*) occupies a somewhat anomalous specific position, since the scientific botanist and the British Fern specialist are hopelessly at issue regarding the family to which it belongs, the former classing it with the Spleenworts, which the latter cannot find it in his mind to do for many reasons. The Spleenworts, for instance, are evergreen, and of hard or stout texture, singularly free as a genus from variation, though our native species are somewhat sportive within limited lines, and finally they affect well-drained positions, such as walls, rocks, and sloping banks. The Lady Fern, on the other hand, is perfectly deciduous, of soft and delicate texture, extremely variable, and revels in the dampest possible habitats, such as boggy places and banks of streams, and likes, in fact, to have its toes in the water, as it were. The only feature even remotely justifying its association with the Spleenworts is the fructification; but even here the spore heaps lie in short curved lines covered with a more or less ragged indusium, while the Spleenworts' typical fruitage lies in long straight lines covered with a regular indusium, so that it is only in some of the small growing *Asplenias*, such as *A. fontanum*, where the sori have no room to form lines, that any possible resemblance can be traced. This feature plays, however, so small a part in the decorative aspects of our subject, that having entered our protest we leave it.

It is, of course, the extreme variability of the Lady Fern with which we have to do, and this is such that no Fern in the world, not even the wonderful *Polystichums*, which will form the subject of another article and have yielded a large number of finds, can vie with it in range of eccentricity. The Harts-tongue (*Scolopendrium vulgare*) also may outstrip it in number, for the name is simply legion of its varietal forms; but the Lady Fern stands apart in its production of such unique forms as *A. f.-f. Victoriae* and *A. f.-f. Frizelliae*, with its tribe of typical sports raised therefrom under culture, while *A. f.-f. acrocladon* and its progeny rank as peculiar to the species in the extent and fine comminution of their branching, which, commencing at the base, repeatedly continues until we behold a sort of emerald sponge resting upon the soil instead of a normal plume of feathery foliage à la shuttlecock.

In its native and most congenial habitats—i.e., in some secluded glen fenced in by umbrageous foliage which at once tempers the wind to its ferny denizens and provides the requisite shade, while the air is constantly humid with the evaporation from the saturated mass of leaf mould which constitutes the soil, the Lady Fern forms dense shoulder-high clumps and attains its fullest development. On the other hand, in the damp atmosphere of our western counties, such as Devon, Dorset or Somerset, we may find the chinks on the earthen dykes, faced with stone, filled with seedlings. The roadsides, too, wherever there is running water may be lined with members of the family, and afford, like the other habitats cited, a happy hunting ground for the seeker of varieties. The veriest beginner will speedily find that variability is the rule rather than the exception, I do not mean to say marked but minor variations occurring in some places to such an extent that it is hard to find two plants alike. Colour, habit of growth, size and mode of division, all vary so that it is difficult to find a really normal form agreeing with that figured by the best authorities.

In my own experience, however, good finds are scarce, hence the greater number of the varieties existing have been raised under culture from wild finds, the spores of which have sported again and again. In Mr. E. J. Lowe's list of British Ferns, out of 313 forms catalogued, only ninety-six are described as found, while in the Shield Ferns 254 out of 428 varieties are wild finds, a much higher percentage. Both in 1891 and 1892, however, I was fortunate enough to find two very good forms indeed. In the first case I was on a visit to a relative in Scotland where I was practically house-bound by a sprained ankle incurred by a slip on the Perthshire hills while hunting for Holly Fern (*P. lonchitis*). My hunting ground was therefore circumscribed to a few hundred yards round the house, which was situated on the side of a hill in Strathblane, down which numerous streamlets made their way through as many Fern-clad glens to the river below. One evening I hobbled a little way up one of these, and while still within hail of the house I suddenly espied a most beautifully curled frond peeping out from under a large plant of the common Lady Fern, and on lifting the latter a five-crowned Lady Fern was seen with all its fronds symmetrically rolled inwards on the tips, which bring down spirally-like ringlets, while the side divisions were rolled in in the same fashion, bearing spiral tips and forming each frond nearly into a tube, these side divisions or pinnæ, moreover, being curved into semicircles. My delight can be imagined at this discovery, for at once I recognised it as an absolutely new form in the family. I immediately looked round for others, and about 20 yards down the stream espied a second, in which, however, the side divisions were flat instead of curved, and presumably a seedling. This form was at once christened *A. f.-f. revolvens*, and in the course of 1892 yielded a number of perfectly typical youngsters.

The next find was in Co. Clare on the Shannon shore, where I went out with the young son and daughter of my hostess. Coming to a deep, dry drain running through a plantation, we saw its sides lined with the Hard Fern (*Blechnum spicant*) and dropped down into it to investigate them. Presently one of the children, who were walking on the brink, made a remark I did not catch, so I pushed the upper growth of Fern aside to hear what it was, and lo! at that identical spot on the bank was a splendidly tasselled dwarf Lady Fern, about 9 inches high, congested, and a thoroughbred, which I should inevitably have missed but for the half-heard remark. A more careful search all round failed to find a companion plant. I trust to be pardoned a seeming egotism in this description of my own finds, as they convey, as I desire to do, a tangible idea of such good fortune as I hope many of your readers may enjoy should they follow my example on their spare days and holidays.

The two chief types of variation into which the Lady Fern has sported are the plumose or extra feathery, and the cristate or tasselled, besides which, as we have seen, there are certain unique types peculiar to the species. It is the plumose forms which in their highest developments are the most likely to please the critical judge of vegetative beauty, and it is certainly in this section that the greatest strides have been effected by means of selective culture. The chief wild finds of this class are:—*A. f.-f. plumosum (Horsfall)*, found in Yorkshire; *A. f.-f. plumosum (Axminster)*, found near Axminster; *A. f.-f. plumosum (Wills)*, found in Dorsetshire; *A. f.-f. plumosum (Barnes)*, found near Milnthorpe. Of these the first named would seem to be the parent of the wonderful *A. f.-f. Kalothrix* (beautiful hair), of which, however, an identical form was previously found wild in the Monrue mountains, though only now represented by a dried frond. This plant is so delicate in structure that it seems made of fine green silk or spun glass, so lucent and translucent is its texture. This I believe is the only sport yielded by this find, and though so dissimilar it has a curious knack of partial reversion, fronds and portions of fronds of the parental type occasionally appearing, while its spores yield frequently true specimens of plain plumosum. Wills' and Barnes' forms have not sported at all; the latter is reputed to be quite barren, but singularly enough a plant in my possession raised by basal cutting is extremely fertile.

The Axminster find, on the other hand, has proved to be the progenitor of a regal line of splendid varieties. A very neat crested form otherwise of the type is one of its earlier sports, together with a form of finer dissection long known as *A. f.-f. plumosum elegans (Parsons)*. A portion of a frond of this last was sent me some years ago for inspection, bearing the unusual phenomenon of bulbils on its under side, accompanied by spores. Some of these were sown with the

extraordinary result, that though the parent had not a trace of crested about it, all but two of the plants out of a batch of over a hundred were heavily tasselled. Most of them were irregular, and hence worthless; but one was perfect, and of such beauty as to merit the name given of *A. f.-f. plumosum superbum*. This, besides being very finely divided, was finely and symmetrically tasselled at all terminals. While yet small a few spores were produced, and of course sown, in this case producing some 120 plants, of which, though no two were quite identical in form, all were perfect, and some superior to anything previously seen. About 50 per cent. of these were uncrested, while the rest ranged through all grades of tasselling. Altogether some ten or twelve quite new plumose forms were selected, one uncrested form, *A. f.-f. plumosum Druryi*, proving far and away the finest plumose Fern ever beheld, being of robust habit, and five times divided (quinque-pinnate). This Fern was adjudged to be the best variety exhibited at Chiswick in 1892. Among the crested section *A. f.-f. superbum percristatum* stands unrivalled, even the pinnules fanning out into wide fimbriate crests. In this case we see what may await the Fern lover when he goes in for selective culture through the spores. Space, however, precludes further dalliance with this theme, and I will therefore conclude my article by mentioning a few of the forms more worthy of attention, prefacing this with the remark that as regards culture the Lady Fern is one of the least dainty of Ferns, a good leafy compost and care in watering securing success.

The best of the plumose forms are as above. Of the crested or tasselled section the best are *A. f.-f. acrocladon*, already described; *corymbiferum* (*James*), *Elworthi*, *cristatum*, *multifidum*, *digitatum*, *percristatum* (*Cousens*), *regale*, *setigerum cristatum*. Of the dwarf and congested type should be acquired *A. f.-f. Edwardsi*, *crispum*, *Grantæ*, *Findlayanum*, *congestum* (*Phillips*), *Frizellæ ramosum*. Among the cruciate forms, or those in which the side divisions are set on in pairs or clusters, there are many raised under culture which are not to be recommended, the grace of the Fern proper being quite lost. This is, however, by no means the case in the following—*A. f.-f. Victorizæ*, unique and unsurpassed; *A. f.-f. Fieldiæ*, *A. f.-f. Frizellæ*, *A. f.-f. Pritchardi* and *Pulleri*. Other charming forms which come under no special class, but are none the less distinct, are *A. f.-f. Vernoniæ*, *A. f.-f. V. cristatum* and *corymbiferum*, *A. f.-f. setigerum*, *A. f.-f. Girdlestonei*, *A. f.-f. conioides*, *A. f.-f. todeoides*, *A. f.-f. revolvens*, *A. f.-f. pulcherrimum*, and *A. f.-f. rectangulare*.

A word of warning must be given to those who have to cultivate these Ferns under the uncongenial conditions of a dry climate or exposed position, that many of the best and most beautiful forms can scarcely be fairly dealt with in the open, the wind and other adverse influences detracting much from their delicacy of appearance. In the shady portions of a cold greenhouse the best of them would well repay the room allotted to them during the summer, while during the winter, when they die down, they can be plunged outside without fear of damage. It is not good to coddle them with warmth, they neither need nor appreciate it, the varieties being as absolutely hardy as the normal forms.—CHAS. T. DRURY, F.L.S., F.R.H.S.

(To be continued.)

CULTURE OF BOUVARDIAS.

THE failure to grow good specimens of *Bouvardias* is undoubtedly due in the majority of cases to too much coddling and insufficient stopping, many persons being under the impression that the plants require a high temperature to grow them well. This is an erroneous idea. True, the cuttings require a little bottom heat to root them in, with a temperature of about 60° for a few weeks afterwards, but after that time to the middle or end of September a cold frame is sufficient. Many growers plant *Bouvardias* out during the summer months, lifting them again in the early autumn, and very good results are thus obtained; but spring-rooted plants should not be so treated the first year.

The propagation of these plants should not be delayed beyond the end of February or beginning of March. Old plants that have done flowering will, if cut hard back and placed in a warm house, and kept well syringed, speedily produce splendid wood for rooting. When the cuttings are about 2 inches long insert them in pots previously filled with light sandy soil to within a quarter of an inch of the rims, and over which a thin layer of clean sand has been placed. Then plunge in bottom heat and keep close until signs of growth commence. During the process of rooting avoid a too humid atmosphere, or the cuttings will damp. See that the bell-glasses or hand-lights are daily wiped on the inside, and when the cuttings are rooted place them singly into thumb pots. Put in a warm house near the glass, shade for a few days, and when freely started into growth pinch out the point of each plant. Repot as may be required, using a compost of four parts rough fibry loam, one part leaf soil, and one part coarse sand. By the time the plants are in 54's or 48's they should be removed to a cold frame. Keep close for a day or two, then gradually harden, and on every favourable occasion remove the lights, especially during the warm nights of summer and early autumn. This treatment will strengthen the plants considerably.

Plants not required for producing cuttings may be started any time during March or April, and when about half an inch of growth has been made, shake them out and replace in smaller sized pots. When fairly started into growth pinch hard back, and remove to a house or pit where a temperature of 50° to 60° is maintained. Keep them here for

a time, afterwards removing to cold frame, and treat as before stated. If the plants are required for autumn and winter flowering keep them well stopped back until the middle or end of July. Many varieties will bear stopping at every pair of leaves, but the condition of each plant must be somewhat of a guide to the cultivator. Good drainage is essential, though never allow the plants to suffer from want of moisture, or they will fall an easy prey to red spider and thrip.

Remove to a light airy house during September, and maintain a temperature of about 55°; an abundance of bloom will then soon be forthcoming. Alfred Neuner, double white; President Garfield, double pink; Priory Beauty, pale pink; President Cleveland, dazzling scarlet, Vreclandi, pure white; and many other good reliable varieties will repay the grower where cut flowers are in demand, and especially so with the sweet-scented varieties.—HEDLEY WARREN.

RAISING BEGONIAS FROM SEED.

As the Tuberous Begonia has become so popular, not only for the embellishment of the conservatory and greenhouse, but also for bedding purposes—in which capacity it can at present hold its own against most comers—a few remarks concerning the raising of plants successfully from seed may not be inappropriate.

The complaint is constantly heard of failure in getting the seed to germinate satisfactorily, and in nine cases out of ten the blame is laid to the seeds, and not, as it should be, to the methods employed in attempts to raise seedlings. It is quite appalling in many instances to see how carelessly these fine seeds are sown and left to the mercy of chance. This is not as it should be, for without due care, no matter what the object in view may be, the best results cannot be obtained. Failure would often be averted and success achieved if a little more time were bestowed on the practice of trifles and the mastering of seemingly slight details.

Many persons fail to obtain Begonia seedlings through covering the extremely small seed. This practice is fatal to success. Others who sow on the surface and do not cover the seed fail to give proper attention to watering. They appear to think that it is only necessary to give the soil a thorough soaking previous to or directly after sowing, and then withhold water until the seedlings appear. In some instances this method is found to answer, but in many cases, owing to the surroundings, or the weather prevailing at the time, the soil becomes dry just as the seeds are germinating, when through lack of sufficient moisture they quickly perish. The following method has been found to give highly satisfactory results, and may therefore be worthy of trial by persons who have hitherto failed to raise the coveted seedlings.

According to the amount of seed to be sown, procure pots, pans, or boxes, but in most cases the latter are preferable, as they allow of a thinner distribution of the seed. Overcrowding of the seedlings is thus prevented, which in itself is a great preventive to damping. The drainage must be thorough; quite a half of the space should be filled with coarse crocks, and these covered with a layer of finer ones, placing on these a little moss or dry leaves, from which all worms or other enemies have been driven. Then fill to within a slight distance of the top with the following compost—loam, leaf mould, and sand in about equal proportions, thoroughly mixed and passed through a half-inch sieve. Make the surface level, and then sift a little of the same compost, with the addition of a sprinkling more of sand, through a very fine sieve, sufficient to cover the whole to the depth of a quarter of an inch. This must be made perfectly smooth, which can easily be done by gently pressing with a piece of board or similar material.

Upon this surface sow the seed as evenly as possible, and give a thorough watering through a very fine rose, taking care that the water is only applied as fast as the soil absorbs it, otherwise there is danger of the seed being run into patches. After sowing, cover the boxes with sheets of glass, and place in a temperature ranging from 60° to 70°. The glass must be sponged dry every morning to prevent the condensed moisture falling into the soil and making holes. About five days from the date of sowing water will be needed if the soil is in the least degree dry. That date is very suitable for watering, as germination is usually apparent from the sixth day onwards. If this stage is successful, passed the rest is generally found to be easily accomplished.

When the seedlings are commencing to show their third leaf, the first rough one as it is generally called, they should be removed to another house where a slightly lower temperature (60°) prevails, and placed close to the glass, which will be conducive to a sturdy growth. This cannot be over-estimated, for if the seedlings are drawn up weakly many of them perish when pricked out, and any time gained at the start will thereby be doubly lost. When the seedlings have a leaf the size of a threepenny piece, carefully prick them out an inch asunder, using for compost the same as that advised for sowing, with the addition of a little more leaf soil. Keep in a temperature of 60° to 65° with sun heat, affording protection from bright sunshine until they touch each other, when remove to cooler quarters. At this stage shift to larger boxes, using a compost of loam two parts, leaf mould, and well decayed manure in equal proportions, one part, and a little sand.

Immediately the plants have become established, and all danger of frost past, remove them to cold frames to harden previous to planting out. If the seed be sown the first or second week in February, and the plants grown as above advised, they will be in good condition for bedding out purposes by the middle of June, or earlier, should the season be favourable for planting out before that date.—SASSENACH.



ELTHAM ROSE SHOW.

WE are requested to state that the annual Exhibition of the Eltham Rose and Horticultural Association will be held on June 28th.

NORTHERN PROVINCIAL ROSE SHOW.

IT is said that an endeavour is likely to be made to induce the National Rose Society to hold their Northern Show at Gloucester in 1895. Can this southern city have any claim to be regarded as a northern centre? Perhaps the rumour is groundless. The proposition certainly seems anomalous. I am not an exhibitor, but take as much interest in the Shows of the National Rose Society as do some of my friends who win prizes.—NORTHERNER.

HYBRID TEAS.

IT would be heresy to doubt the correctness of your reporter, and therefore I am obliged to say that my contentions on this subject, as far as Mr. F. Cant's resolution is concerned, are untenable. I cannot plead deafness, for our chairman's sonorous voice would have made even the deaf adder hear, so I suppose I am daft; at any rate I regret that I should have contravened "J. B.'s" statement (page 75). In all other respects on this vexed question I still hold to my opinions and statements, but with regard to this I can only say *peccavi*. What more can I do?—D., Deal.

QUEEN'S PRIZE, WINDSOR SHOW.

IN reference to Mr. Romaine's confirmation (page 92) of this prize having been given by Her Majesty the Queen, to which fact I referred in your issue of the 25th January, I would like to say that I think it is unfortunate that the Windsor Secretary and one of the National Rose Society Secretaries decided between them to allocate this cup to amateurs alone. Their decision was certainly confirmed by the Committee of the N.R.S. in so far as that the Windsor schedule, set "cut and dry" before that Committee on the 16th January, was in no material way altered; but on such an occasion, and with a prize so unusual as this one is, it would have been far better and more generous of our Executive to have decided on even a smaller class of Roses, and allowed all England, Scotland, and Ireland to compete.

In a class for six or nine Roses (certainly the former) any grower would have had a fair chance, and the professional would have been on a level with a small amateur. Anyone would feel proud of possessing our Queen's cup for Roses, and I hope it may be worthy of its title and of the gracious lady who presents it, but I think it is a great pity and an error of judgment that it should be given for just that number of Roses and class of growers, which will, in fact, practically confine its competition to about a dozen amateur growers. In my opinion the competition, which with a smaller number of flowers (six or nine), and in a class open to everyone in the kingdom, would have resulted in an entry quite unparalleled, will now, under the present restriction, dwindle down to a few of the bigger amateurs, and although I do not doubt Mr. Romaine's wish that "a strong competition will result," I fear the entry will not result as he hopes and anticipates.

NATIONAL ROSE SOCIETY—SYNONYMOUS ROSES.

HAVE any of your N.R.S. readers taken in, and if so, do they thoroughly appreciate the importance of the alterations made at the annual meeting of our Society in the rule for synonymous Roses? Two sets of Roses were added to those already bracketed as synonymous—viz., Rosieriste Jacobs to Duke of Wellington, and Souvenir de S. A. Prince to The Queen; but whether intentionally or otherwise the rule was also altered very materially by the omission of the following Roses hitherto and for some years bracketed.

Alfred Colomb
Marshal P. Wilder
Wilhelm Koelle
Lady Mary Fitzwilliam
Lady Alice

Madame A. Lavallée
Marie Baumann
Adam
President

There was one other omission of a trivial character, but the above Roses are of the very first importance.

If the rule has been altered in the above cases of purpose intent then the matter is most serious, as by the omission of brackets all the above-mentioned Roses can be shown in boxes together as distinct varieties, although really identical in each bracketed case. If the omission be unintentional and an oversight, then we are all to blame for overlooking the blunder. But whence and what is the *fons et origo mali*? In the fact that people at a meeting cannot possibly go carefully and critically in a short time (such as two hours) through a page of agenda whose items number sixteen subjects, some of considerable importance to our Society. What is the remedy? That the agenda should be in the hands of a sub-committee to carefully check the contents and see that no serious error has been made. I also contend that the Committee agenda should be in the hands of its members in a detailed form a full week before such meeting. I last year, prior to

resigning my seat on the Committee, asked the Secretary responsible for this work several times to make this most desirable and feasible alteration in the routine, and I hoped it would be carried out as promised. It would certainly have saved the present difficulty; it would also enable the members of our Committee to carefully consider in advance all subjects which are about to be laid before them. As matters now are, all questions cannot be given adequate consideration within the short space of time devoted to the Society's business.—CHARLES J. GRAHAME.

WORKSOP ROSE AND HORTICULTURAL SOCIETY.

THE annual meeting of this Society was held on Wednesday last week at the Lion Hotel. Mr. Machin, J.P., Vice-President and District Secretary of the National Rose Society, occupied the chair, and there was a good attendance. The first business was the reading of the annual balance-sheet. Mr. Whall thought they might look upon this as satisfactory, when they considered that they entertained the National Rose Society last year. He confessed he thought they would absorb the whole they had in hand from 1892, but they had only reduced it from £56 0s. 8d. to £33 7s. 9d. Mr. Slade considered the balance-sheet much more satisfactory than he had anticipated, and Mr. Dougill also shared the same opinion. The Chairman remarked that Worksop was the smallest town that had ever entertained the National Rose Society, and with most of the towns their balance was on the wrong side; they must therefore consider their financial position exceedingly satisfactory. The balance-sheet was unanimously passed as read, and the meeting then elected the officers for the ensuing year, with His Grace the Duke of Portland as President, and Henry Vessey Machin, Esq., J.P., Vice-President. The Treasurer read an extract from the "Rosarians' Year Book for 1894," in which particular attention was drawn to the excellent management of the National Provincial Rose Show at Worksop by the officials of the Worksop Horticultural Society. The book also spoke very highly of the services rendered by Mr. H. V. Machin. A vote of thanks to the Chairman for presiding terminated the proceedings. The next Rose and Horticultural Show is fixed for July 12th.

ROSES IN POTS.

WITH the majority of Roses in pots there is now a great deal of work to be done; in fact, the present is probably the most important period of their culture. Early plants are already well into blossom; but the majority of persons do not need, or at any rate do not grow, many of these extra early plants. Unless care is taken at this time we get unpleasant visits from mildew and many insect pests. Once allow either of these to gain a footing and the pleasing results of previous labour and expense are almost ruined. Of all foes to Roses probably mildew is the most dreaded, while it certainly plays havoc with the plants sooner than any other. Yet there is little excuse for trouble from this under glass, provided we take due precautions and apply remedies immediately it appears.

Efficient remedies are numerous, and there is little choice. What I consider the cheapest is formed as follows:—One pound of softsoap boiled for ten minutes, then add a wineglassful of soluble petroleum and about double the quantity of flowers of sulphur as soon as possible after removing the softsoap from the fire. A saucepan holding a gallon and a half will be a handy size for mixing these, and about three parts filled with water when dissolving the soap. Such a mixture as the above will make sixteen to twenty gallons of solution, deadly to mildew and quite safe for use. It may be kept for any length of time, and is more effectual when applied at a temperature of 70° to 80°. Rather than use it in a niggardly manner I would increase the amount of both petroleum and sulphur, and then make the solution serve for a double quantity. What we want is to use a solution freely, and one which will not hurt the plants or young foliage in any way. It is of even greater importance to guard against the attacks of the enemy, and this is best accomplished by paying great care to ventilation and temperature. Such sudden and wide rises and falls in the temperature which occur during an hour or two of bright sunshine are often the precursor of mildew. One is tempted to admit more air, when, if the inside and outside temperatures be widely different, as is often the case at this time, a keen draught of more or less power is the result. This, with its chilling influence upon the foliage nearest to it, will almost invariably bring on an attack of mildew.

Another most important factor is the dryness or moisture of the atmosphere, also the root supply of same, any too complete or sudden changes in this direction having much to do with the enemy now under notice. All of these causes do not need much attention and trouble to avoid. Ventilation can be afforded earlier, and the need of it often avoided by judicious stoking. We can counteract the influence of a sudden rise by keeping the air moist, and by a little care in each direction an attack of mildew is frequently warded off.

Insect pests are also much checked by a free use of the weak mixture already described. This, with an occasional fumigation upon successive evenings, will keep down any insects except scale. The latter is a hard enemy to fight against after young growth has commenced, no remedy being effectual without great injury to growth and foliage. Green fly, red spider, and thrips cannot thrive if the syringe is used freely, and there is no reason why it should not if favourable occasions be selected for the operation. In dull weather use it about nine in the morning. When bright weather prevails it may be used a little earlier, and again at night. This appears troublesome and laborious when described, but

in practice the time is saved over and over again when we use it as a preventive rather than a cure.

As growth advances it will derive much benefit from weak doses of liquid manure; it also feeds, much more than many would seem to imagine, upon the ammonia arising from a little of the manure water used to damp down or moisten the atmosphere. The clean foliage and open pores caused by a free use of the syringe places the plant in a splendid condition for atmospheric feeding, and I always make a practice of aiding them in this way. With brighter weather, say during March, it is wiser to give a very slight shading than to admit air. Few imagine how slight a wash is effectual in breaking the force of the sun during the spring months, and we must avoid the need for ventilation during bright weather accompanied by a chilly wind. Room and light among the growth is of the utmost importance, and I cannot help thinking that the advice of air and light would often be better expressed as room and light; even these are both included in one or other of the last terms. Many have misconstrued the term air to mean a free circulation. When the air is of the right temperature this is very well, but it is fatal to successful culture otherwise.—PRACTICE.

FORCING NARCISSUS TELAMONIUS PLENUS.

WHY do gardeners write without they really know that their information is reliable? We claim to know a little about forcing the above and *N. obvallaris* mentioned on page 88, and venture to assert that it is impossible to force either to be in flower at the same time as Roman Hyacinths may be had, viz., October and November; *N. obvallaris* flowers about a week earlier than *N. Telamonius plenus*. We can assure your correspondent that if he is able to produce 400 to 500 flowers from a box 2 feet by 16 inches (How is it done?) and can force these bulbs as he states, he has the knowledge of soon realising capital. We force annually about 150,000 various Daffodils, and think we can claim to be the first firm to exhibit at the Royal Horticultural Society's Show at South Kensington, many years ago, a collection of early forced Daffodils.—COLLINS BROS. & GABRIEL, *Hampton*.

[It is a bold thing to charge Mr. Bardney with writing about what he does not understand and recommending methods he has not proved. Our correspondent stated that the variety in question can be forced "nearly as well and as early as Roman Hyacinths," and that flowers could be had in abundance in January. We suspect he has made a little capital by his good work, but he has not yet told how many bulbs he packed in boxes of the dimensions indicated and the number of blooms each plant produced. We know they are packed as closely together as possible for forcing as suggested. We have seen better work in the early forcing of Narcissus and other bulbs for the Liverpool market by Mr. Bardney when he was at Norris Green than we have seen in London before Christmas.]

A VISIT TO MESSRS. CLIBRAN'S.

TIME speeds quickly, and on paying a recent visit to the Oldfield Nurseries, Altrincham. I could scarcely bring myself to believe that twelve months had elapsed since I made my previous call on this enterprising firm. More ground has been acquired, and, if I mistake not, another large addition will shortly be added. The reason of the success is not far to seek, as they keep abreast with the times. Mr. Clibran's great object is to make all about him comfortable, and by doing so he earns the respect and good wishes of the large army of workers which he employs.

The Chrysanthemums made a grand display at the time of my visit. The show house is one of the finest of its kind in England, being a span-roofed structure 210 feet long by 30 feet wide, the plants being arranged on each side, with the path in the centre. As showing the magnitude of the collection, I may mention that over 3000 plants of all the best varieties are grown. These in their season are visited by thousands of people from the neighbouring towns, who can at a glance see the best of everything. A systematic weeding out takes place each year, so that all varieties of note are kept up to date. In this particular line Messrs. Clibran do a great trade.

Other important plants include the Zonal Pelargoniums, which on that autumn day presented a gorgeous sight. A structure, of the same dimensions as the Chrysanthemum house, was filled with plants in bloom. Only the best varieties are grown, with the seedlings which the firm have sent out, and their new ones for this season are equal to anything ever seen. Roses in pots occupy three houses, 200 feet each in length, and were remarkable for well-ripened growth. They were being tied down from the wires, and large inroads were made to supply the numerous orders which had been received. It would occupy too much space to enumerate all the choice and valuable stove and greenhouse plants, but special mention must be made of Crotons, Alocasias, Dipladenias, Cyclamens, Bouvardias, Ixoras, the two varieties of *Richardia æthiopica*, including Little Gem. Carnation Winter Cheer was most conspicuous. Of Roman Hyacinths 50,000 are forced annually, these being required to supply the demand for cut flowers required at their Manchester emporium. Tuberous Begonias were just going to rest.

A large house has been erected to afford shelter to the choicer kinds of Ivies, Clematis, and similar plants. In this structure I noticed a splendid stock of *Cytisus scoparius Andreanus*, good alike for conservatory and outdoor decoration. Another novelty is the *Urceocharis Clibrani*, which originated with this firm, being the result of a cross between the *Urceolina* and *Eucharis*. A large stock is being worked

up. The sale is already great, as it ought to be, for even the smallest bulbs are profuse in flowering. Succulents are being cultivated largely, and in some cases, notwithstanding the rapid propagation, the demand exceeds the supply.

Herbaceous plants, Dahlias, and Coniferæ are extensively grown, and some sterling novelties amongst the Dahlias are catalogued for distribution. Roses and fruit trees are grown chiefly at their Principality Nurseries, Llandudno. Other good features must be left for some future time.—A VISITOR.



EVENTS OF THE WEEK.—As mentioned in another paragraph, the annual general meeting of the Royal Gardeners' Orphan Fund will be held on Friday the 9th inst. at the Cannon Street Hotel, E.C., Dr. Hogg presiding. The Committees of the Royal Horticultural Society will meet at the Drill Hall, James Street, S.W., on Tuesday the 13th inst., and in the afternoon of same day the annual general meeting of the Fellows of the Society will be held in the Council Room at the offices, 117, Victoria Street, S.W.

— THE WEATHER IN LONDON.—Mild weather has prevailed in the metropolis during the past week. Sunday was fine and windy, but Monday proved showery, with local fogs. Tuesday was fine and mild, but windy, Wednesday opening similarly.

— WEATHER IN THE NORTH.—On the 1st of the month we had 5° frost, with a slight fall of snow. Heavy rain followed in the evening. Till Monday, which was fine both day and evening, no day has been dry throughout, and high westerly winds have been frequent. The night of Monday, or rather Tuesday morning, was extremely boisterous with heavy rain, and this continued into the forenoon. Heavier flooding has taken place in many parts of the country than has been known for thirty years, owing to the frequent rains and melting snow.—B. D., *S. Perthshire*.

— ROYAL GARDENERS' ORPHAN FUND.—The annual general meeting of the supporters of the Royal Gardeners' Orphan Fund will be held on Friday the 9th at 2 P.M., at the Cannon Street Hotel, London, E.C. Dr. Hogg will preside.

— ROYAL HORTICULTURAL SOCIETY.—The next meeting of the Society will be held on Tuesday, February 13th, in the Drill Hall, James Street, Victoria Street, Westminster. The Fruit, Floral, and Orchid Committees will assemble at noon, and the annual general meetings of Fellows will take place in the Council Room, 117, Victoria Street, at three o'clock, to hear the report for 1893, and to elect new officers for 1894.

— NATIONAL AMATEUR GARDENERS' ASSOCIATION.—The third annual general meeting of this Association was held at the Memorial Hall, Farringdon Street, E.C., on Tuesday evening last, Mr. T. W. Sanders presiding. According to the Committee's report for the past year the Association is numerically in a flourishing condition, there being 500 members on the books. The financial statement showed a fair balance on the right side. After the adoption of the report it was decided to alter the terms of subscription, the sum being not less than 2s. 6d. or more than 10s. per annum.

— THE KEW GUILD.—We are asked to state that the annual general meeting of the Kew Guild will, by permission of the Director, be held in the Library in the Royal Gardens, Kew, on Monday, February 26th, at 8 P.M. It is hoped that as many "Past Kewites" as possible will endeavour to be present. The chief business will be the election of officers and the adoption of the Committee's report. The Secretary will be glad to receive any addresses omitted from the first number of the Journal and any subscriptions not yet paid.

— THE DIFFICULTIES OF THE ROYAL BOTANIC SOCIETY.—At last this very exclusive Society, which has often been complained about for its slowness in paying exhibitors their prize money, has been constrained to send a "humble memorial of the Council and Fellows" to the Lords' Commissioners of Her Majesty's Treasury for relieving the Society of its financial difficulties—a debt we understand of some £18,000. We are sorry for the necessity and the appeal, and shall be

very much surprised if the Lords of the Treasury create a precedent by granting public money to an institution of this nature that is ostensibly maintained for the gratification of the rich—plus a few students—while the general community cannot even visit the gardens on the payment of a fee. Why do not the authorities apply to the London County Council for aid? If a grant cannot be had from this representative body, how can it be expected from the Government? If State aid is merited by any chartered organisation, having for its objects the promotion of horticulture in its broadest sense and most varied aspects, it is the Royal Horticultural Society. This is, at least, a "live" Society, and is always at work, while the R.B.S. is mainly a Society of shows culminating in a continental burlesque of dressing donkey carts with flowers and other gew-gaws for the gratification of the *haut ton*. Public money would be misapplied if devoted to the bolstering up of any societies of this nature.

— MARKET GARDENING IN CORNWALL.—Referring to the extension of a railway, the "Cornishman" newspaper observes:—"Broccoli covers about 1000 acres in West Cornwall, averaging ninety-five crates per acre, thirteen to the ton, 7 tons per acre—a total of about 7000 tons. There are forwarded to midland and northern markets, including both routes, 4743 tons; to London, 1400 tons; to Wales and local, 857 tons=7000 tons. The flowers from Scilly to London and all other districts are estimated at 389 tons, at an average value of 7s. 6d. per cwt., while 75 tons of flowers and other perishable goods are sent from West Cornwall by passenger trains. On Thursday in last week local growers of Wallflowers were glad to hear that the G.W.R. Co. had reduced the carriage to 4s. per cwt., and are making arrangements with other companies with a view to reducing the rate to other markets. This is very satisfactory to the market gardeners of the west."

— A RECTOR'S FLOWERS.—The same paper says:—"Rev. Nigel Neville, rector of St. Ewe, St. Austell, sent four dozen and a half Chrysanthemums, 4 inches across, twelve dozen Maidenhair Ferns, two dozen and a half Roman Hyacinths, twelve dozen Violets in bunches, two dozen Narcissus, Polyanthus, and various other things to a salesman. All were said to have been sold for 3s.; carriage and commission 2s. 4d.; cost in the gardens, for growth, picking, packing, and taking to railway station, 8d.! No wonder London shoeblacks and Birmingham sweeps can wear buttonholes, and commission agents live on the fat of the land and make their thousands."

— JUSTICIA FLAVICOMA.—I have frequently drawn attention to this old plant for conservatory decoration during the winter. It can be brought into bloom after Chrysanthemums and Celosias are practically over, and is very effective. I am surprised it is not more extensively grown. Everyone who sees the plant in bloom notices its beauty. The first blooms over, it flowers a second and even a third time if the plume is not removed. It is best to root cuttings annually; the plants make finer foliage, have greater vigour, and keep perfectly clean from insects. Old plants, or those that once become stunted, are a source of trouble, being certain to be attacked by scale. —WM. BARDNEY.

— THE QUEEN AND THE FRUIT GROWING INDUSTRY.—It is reported that Mr. Richard H. Bath, of Wisbech, recently forwarded to the Queen some particulars of the fruit growing industry in the Wisbech district, together with a water-colour painting by Marie Low of some Empress Pansies grown in the neighbourhood. In acknowledgement, Lieut.-Colonel Arthur Bigge, Assistant Private Secretary to Her Majesty, writes:—"I am commanded to convey to you the Queen's thanks for the interesting details relating to the fruit and vegetable farms in Wisbech, and also for the painting of the group of Empress Pansies which you were kind enough to offer for Her Majesty's acceptance."

— A MEMORIAL TO THE LATE MR. CHARLES DARWIN.—At a public meeting held at Shrewsbury on Tuesday in last week, it was resolved to raise a memorial to Mr. Charles Darwin, who was a native of that town. Another public meeting will be held to consider the best method of carrying out the proposal. The Mayor of Shrewsbury, in commenting upon the proposal, rightly remarked that in doing honour to one who had shed an imperishable lustre on his native town they were doing honour to themselves. In addition to the suggestion that a bronze statue of Darwin should be erected in front of the old Grammar School, now the Public Library and Museum, it was proposed to found a scholarship to his memory in connection with Shrewsbury School. Another suggestion, we learn from "Nature," was that the memorial should take the form of a hall of science to be erected in Shrewsbury for the purposes of scientific and technical instruction.

— POLYANTHUS NARCISSUS SNOWFLAKE.—This variety is a decidedly great improvement upon the old Paper White, and when well known will entirely take the place of that old and useful kind. There is certainly a difference in the price, but the new form is more than worth the extra amount that is charged. In future Snowflake will be grown on a larger scale. Arranged in glasses with its own foliage, and a frond or two of *Adiantum cuneatum*, from Christmas onwards it is both sweet, effective, and choice.—B.

— A TECHNICAL INSTRUCTION LEGACY.—It is reported in "Nature" that a sum approaching £50,000 has been bequeathed by the late Mr. T. H. Adam of Newport for the purposes of technical instruction. The money is to be devoted to teaching practical and theoretical agriculture to men and youths, and a knowledge of dairying, house-keeping, and other subjects to women and girls, either by means of lectures or the establishment of a school or schools of agriculture at Edmond or Woodseaves, in Shropshire, or Chadwell, in Staffordshire, or elsewhere; or by such other means as the trustees shall think fit.

— TREE PLANTING.—Your correspondents Mr. E. Luckhurst and Mr. Molyneux (page 70) seem to differ a little on the subject of autumn and winter root action as applied to newly planted trees. About three years since I had occasion to transplant from our kitchen garden to an orchard some Apple trees that had been planted ten years. They had good large heads, and I wished to get all the trees together before I got horse labour. In the meantime a hard frost set in, which lasted six weeks, with snow, and I had the trees laid in some materials from spent hotbeds. When the ground was fit for planting I found that the trees had made a number of fresh wig-like rootlets at the ends of all the strong roots.—R. M., Newbury.

— THE YORK GALA.—According to the schedule, a copy of which has come to hand, the thirty-sixth year of the grand York Gala, to be held on June 13th, 14th, and 15th next, will in no way be inferior to previous exhibitions. Upwards of a hundred classes for plants, flowers, fruit, and vegetables have been arranged, and liberal prizes are offered. In one class for a group of miscellaneous plants arranged for effect and occupying a space of not less than 300, £52 will be given in prizes as follows:—£20 first, £15 second, £10 third, £8 fourth, and £5 fifth. For a group of ten stove and greenhouse plants in bloom (Orchids excluded) and six ornamental foliage or variegated plants £42 are offered in prizes, as £20 first, £14 second, and £8 third. Correspondingly high awards are also noticeable throughout the schedule. Mr. C. W. Simmons, 13, New Street, York, is the Secretary.

— RUNNER BEANS AT CHRISTMAS.—It may not be generally known that Runner Beans can be had all the year round with very little trouble and expense. The Beans should be gathered when dry and placed in jars alternately with layers of salt. The jars should be examined daily for a few days, as the Beans will be found to shrink and require filling up as before. Select young pods for the purpose; when full tie down, and all is completed. When required for use the pods should be laid in water to soak at least twelve hours previous to cooking. A small piece of common soda used in boiling gives them a better colour. If the above particulars are carried out the Beans will be found almost equal to those recently gathered. As forced Beans at this season of the year entail a considerable amount of labour and expense, and are only a luxury for the few, I venture to bring my simple experiment before the readers of the *Journal*. I sent a dish of Beans to my employer's table, and they were much appreciated.—G. E. G.

— THE INTERNAL TEMPERATURE OF TREES.—This has formed the subject of some investigations by M. W. Prinz ("La Nature"). The results show that the mean annual internal temperature of a tree is practically the same as that of the surrounding air, but the monthly means differ by two or three degrees. In general it takes a day for a thermal variation to be transmitted to the heart of a tree. On some days the internal temperature differs by as much as 10° C. from the air outside, but generally the difference is only a few degrees. When the air temperature falls below the freezing point the internal temperature of a tree descends to a point near that at which the sap freezes, and appears to remain there. The maximum temperature of the interior of the trunk of a tree may occur some time before the maximum is reached by the surrounding air, owing to the action of the spring sun upon the tree while devoid of foliage. During the high temperatures of summer the internal temperature was proved by investigation to be about 15° C. with a variation of 2° C. at the most. Speaking generally, a large tree is warmer than the air in cold months, and a little colder than the air during the summer months.

— **HEREFORDSHIRE FRUIT AND CHRYSANTHEMUM SOCIETY.**—We understand that the Society's Show for 1894 has been fixed for 7th and 8th November next. Mr. J. Ough, 7, Clifford Street, Hereford, is the Honorary Secretary.

— **FRUIT GARDEN APPOINTMENT IN AFRICA.**—We are informed that Mr. Ernest Waller, of Messrs. Thomas Methven & Sons, has been appointed by Dr. Rowand Anderson, Superintendent of his Fruit Gardens in Tangier, Morocco, North Africa.

— **POTATOES JEANNIE DEANS AND THE BRUCE.**—In some catalogues I see it mentioned that the Potato Jeannie Deans was raised by Mr. Findlay, the raiser of The Bruce. Is this correct? and was Mr. Findlay the raiser, or merely the introducer of The Bruce?—G. M.

— **BIRKENHEAD GARDENERS' SOIREE.**—The gardeners of Cloughton, Oxtou and Birkenhead held a soirée at the Waverley Rooms, Oxtou Road, last week. There were over 100 guests present, and Mr. Geo. Edwards presided. Mr. T. D. Smith of the Palm Grove Nurseries, urged upon all present the necessity of forming an Association for the benefit of the gardeners in the neighbourhood. Music was much enjoyed, and a pleasant evening was spent.—R. P. R.

— **CAMELLIA FLOWERING OUTDOORS.**—There is now at Kelston Knoll, Bath, the residence of H. O. Wills, Esq., a good specimen of Camellia Donckelaari with a number of well developed flowers upon it. The plant is from 10 to 11 feet high, and is in a very sheltered position outside; the flowers are clean and well marbled. There are some hundreds of buds yet to open. The late severe frosts do not appear to have retarded the opening of the flowers in the least.—J. W. T.

— **EARTHWORMS IN CALIFORNIA.**—Mr. G. Eisen has commenced the description of the earthworms of California; though a dry and rainless country for six months in the year, it still would seem to possess a worm fauna rich both in species and individuals. With the exception of two very imperfectly described species by Kinberg no true earthworms have been recorded from this part of the world. While reserving a detailed account for the Transactions of the Californian Academy, Mr. Eisen gives diagnoses of *Deltania*, a new genus near *Microscolex*, with three new species: *D. elegans*, pretty widely diffused, and the largest species of the genus, being from 2 to 4 inches in length; *D. troyeri*, from Golden Gate Park, San Francisco; and *D. Benhami*, Alameda County. *Argilophilus* is a new genus near *Plutellus*; *A. ornatus*, n. sp., is the most common earthworm of the region, and *A. papillifer*, n. sp., is a more southern form.

— **THE VALUE OF ANIMAL FOOD.**—A Cornish paper is responsible for the following amusing incident which is reported to have occurred last week:—"It is said of a certain man near St. Just that he was taken very ill one day, and accordingly sent for medical aid. The doctor arrived on the scene, and after the usual examination, pronounced his patient to be simply suffering from bodily weakness for want of proper nourishment. Plenty of animal food was ordered, of which the sufferer acknowledged that he was able to get plenty. The man, shortly after the doctor had left, sent and got an abundant supply of Turnips, Mangolds, and straw, this being his idea of what animals' food was! A few days after the doctor called again and inquired into his condition, but the man was nothing better: in fact, worse. "Have you eaten plenty of *animal food*?" "Well," said the man, "I got on weth tha Turnips an Mangels alright, but be blawed if I cud get away weth the straw!"

— **PRESSURE ON SEED GERMINATION.**—A correspondent writing to "Nature" says he found that under a pressure of two and a half atmospheres Mustard seed germinated twenty-five hours earlier than under the ordinary pressure of the atmosphere; but that the early development became permanently arrested during the eight days of the experiment, and the cotyledons of one that had escaped entirely from the seed coat remained as etiolated as if grown in absolute darkness, while those under ordinary pressure grew rapidly, and their cotyledons became of a deep green colour. The etiolated plants, when removed from the pressure, rapidly grew into vigorous young plants. An increased pressure would, therefore, seem to stimulate germination and prevent the formation of chlorophyll. The pressure was obtained by the use of a column of mercury. The seeds were sown on moist cotton wool, placed in a small bottle, which was then secured to the curved extremity of a glass tube, into the long arm of which mercury was poured until it reached a height of 45 inches above the level of the metal in the short arm.

— **THE CYCLAMEN GRUB.**—Can any reader give an account of the life of the Cyclamen grub? Does it become a fly or moth, and at what season? Also the best means of destroying it.—SUBSCRIBER.

— **73° OF FROST.**—A cablegram states that an intensely cold wave is passing over the State of New York. At Saranac Lake the thermometer reached 41° below zero, or 73° of frost, on the 4th inst.; and at Plattsburgh 18° below zero were registered.

— **MUSHROOMS AND BLACKBERRIES.**—We learn the Essex County Council has passed a resolution to the effect that Mushroomss Blackberries, and all other wild fruits belong to the farmer, and that an Act should be passed to prevent people taking them without permission.

— **IRON DOORS FOR GREENHOUSES.**—"E. K." (page 65) in his interesting communication about horticultural buildings and their discrepancies suggests iron doors. If these acted in the same manner as wrought-iron gates do during the summer, I think he would quickly wish for a return to wood, with all its inconveniences. The objection to wrought-iron gates is the manner in which they expand during hot weather, so much so that sometimes they cannot be shut, and when shut cannot be opened. We have five gates made of stout wrought-iron leading into the kitchen garden, and during hot weather they are often a nuisance until the air grows cooler, when the metal recedes to its normal size. Cast-iron is not influenced so much by extreme heat, but from the manner in which doors are often shut they would very often be found in several pieces if made of this metal.—E. M.

— **POISONOUS PROPERTIES OF YEW.**—Adverting to the above subject discussed in your two previous issues (pages 30 and 89), I know of three cases where fatal results have happened to animals after eating Yew. The first case (1877) was of a donkey turned into a yard where the Yew and other evergreens that had been used for church decoration at Christmas were thrown aside. Another of some sheep (six, I believe) turned into the churchyard to graze. The other case happened last year. A valuable mare belonging to a relation of mine was turned out to graze; the fence was bad and she got to some Yew trees. The post-mortem decided it as a plain case of Yew poisoning. I enclose a cutting from the past week's "Evesham Journal," in which Mr. Rimell says there were two or three shrubs near the churchyard at Mickleton, and cattle were found dead two or three yards away. There seems to be no doubt about the poisonous nature of the Yew.—ALFRED G. GROVE, Tewkesbury.

— **LIVERPOOL HORTICULTURAL ASSOCIATION.**—On Saturday evening last the annual meeting of this Association was held in the Wm. Brown Street Museum, there being about sixty members present. The Committee regretted to have to report a loss on the year's working of £79 14s. 1d. The Lord Mayor of Liverpool, W. B. Bowring, Esq., was elected President for the current year, the following gentlemen being added to the list of Vice-Presidents—viz., G. G. Musson, Esq., H. B. Gilmour, Esq., and W. F. Lund, Esq. W. Fletcher Rogers, Esq., was re-elected Hon. Treasurer, Mr. G. Blackmore Sub-Treasurer, and Messrs. R. G. Waterman and John Peers Auditors; the new members added to the Committee being Messrs. W. and J. Harrison, John Jellicoe, and Edwin Bache. A proposition that Mr. Edward Bridge be appointed Secretary was carried by the Chairman's casting vote. The spring Show is to be abandoned for this year, but the summer and autumn Shows are to be held, the dates being left with the Committee. The usual sums were ordered to be sent to the Gardeners' Royal Benevolent Institution and to the Royal Gardeners' Orphan Fund.—R. P. R.

— **ORIGIN OF GUANO.**—Mineral phosphates and guano are often confounded with each other. So much of these articles are used in gardening that it interests all to have an idea what it is, Navassa guano is frequently referred to. The "Independent" notices that the phosphate deposits of the island of Navassa in the West Indies, are represented by E. V. d'Inwilliers, of Philadelphia, as occurring in two terraces; the one, of grey phosphate, in a low terrace from 10 to 70 feet high encircling the island; the other, of red phosphate, abounding in caves upon an upper flat, 230 feet above the sea. The mineral, "Meehan's Monthly" remarks, "occupies irregular fields or caves in a coral limestone, not extending deeper than 20 feet. This red variety contains over fifteen per cent. of iron and alumina, and probably some of the lime has been leached out. The island looks like a coral atoll. The phosphate must have been of organic origin and washed into the surface cavities, and partly or wholly derived from the droppings of birds. There are 130 acres of the grey variety, more than half worked out; while the red phosphate, the less valuable, is much more abundant."

— AN ADDITION TO THE MUSEUM AT KEW GARDENS.—We understand that through the liberality of Mr. J. H. Veitch the Museum of the Royal Gardens at Kew has recently been enriched by the whole of the fine and extensive collection of vegetable products made by him during his recent travels in Japan. The collection is not only very extensive, but it is also very varied, and contains many things quite new to the Museum.

— THE TOTAL RAINFALL FOR THE PAST MONTH AT ABBOTS LEIGH, HAYWARDS HEATH, SUSSEX, was 3.96 inches, being 1.83 inch about the average. The heaviest fall was 0.94 inch, on the 25th. Rain fell on twenty-two days. The maximum temperature was 50°, on 12th and 20th; the minimum 8°, on the 7th. Mean maximum, 42.17°; mean minimum, 31.16°; mean temperature, 36.66°, about 1° above the average. With the exception of first week, a mild wet month with high winds.—R. I.

— THE WEATHER IN SOUTH WALES DURING JANUARY.—Mr. W. Marriott, The Gardens, Gwernllwyn House, Dowlais, Glamorgan, writes:—"The rainfall here for the past month amounted to 7.24 inches; number of days on which rain fell alone twenty days; snow and rain on three days, and snow alone on three days; greatest amount for twenty-four hours, 0.75 inch on the 15th. Number of days of sunshine, four; greatest amount, six and a half hours on the 23rd. With the exception of the first week the weather has been very mild for the month."

— JANUARY WEATHER IN HERTFORDSHIRE.—Mr. E. Wallis, The Gardens, Hamels Park, Buntingford, Herts, observes:—"During the past month we have experienced frost of unusual severity, which fortunately did not last many days. The 4th was a day of extraordinary piercing cold; on the 5th, just before the sun set, I registered 22° of frost, and by 10 o'clock same evening there were 29°, which continued until sunrise the next morning. I have known the mercury to fall lower, but never so early in the evening. Since the frost has broken up the weather has been very mild. Rain and snow has fallen on twenty-one days during past month. Maximum in any twenty-four hours was 0.43° on the 14th; minimum in any twenty-four hours was 0.01° on the 26th; total during the whole month 2.0° against 1.67° of 1893."

— THE WEATHER IN SCOTLAND.—The past month has been a very variable one, frost, snow, and rain alternating often in the twenty-four hours. More snow has fallen since the New Year than what fell altogether the previous two winters. Rain fell on twenty-six days, with a total of 8 inches; 3.885 inches of that fell on the last seven days. Frost was registered on seventeen nights; total amount of frost registered, 146°. Mean maximum, 42.2°; mean minimum, 30°. Highest maxima, 50.8°, on the 11th and 13th; highest minima, 42.3°, on the 14th and 17th. Lowest maxima, 16.2°, on the 6th; lowest minima 2.5° below zero on the 7th. 16.2° was the 9 A.M. reading on the 6th. The temperature gradually fell until some time about midday it stood at 7°. Thereafter it rose a few degrees, but at no time did it rise above 12° until noon on the 7th. The reading at 9 A.M. on the 7th was 3.3°.—G. M'DOUGALL, *Stirling*.

— SUMMARY OF METEOROLOGICAL OBSERVATIONS AT HODSOCK PRIORY, WORKSOP, NOTTS, JANUARY 1894.—Mr. J. Mallender writes:—"Mean temperature of month, 37.2°. Maximum on the 11th, 53.0°; minimum on the 6th, —4.4°. Maximum in the sun on the 20th, 88.5°; minimum on the snow on the 7th, —3.0°. Mean temperature of air at 9 A.M., 36.4°; mean temperature of soil 1 foot deep, 38.7°. Number of nights below 32°, in shade, twelve; on grass, twenty-three. Total duration of sunshine, thirty-nine hours, or 16 per cent. of possible duration. Total rainfall, 1.37. Rain fell on twenty-two days. Average velocity of wind, 13.6 miles per hour; velocity exceeded 400 miles on ten days; velocity fell short of 100 miles on two days. Approximate averages for January—Mean temperature, 37.1°; sunshine, thirty-five hours; rainfall, 1.69. The principal feature of the month was the very sharp frost in the first week, which, however, only lasted a few days. The minimum temperature is the lowest we have had since December, 1879."

— THE WEATHER AT HODSOCK PRIORY, WORKSOP, NOTTS, 1893.—Mr. Mallender also remarks:—"Last year will long be remembered for the exceptionally hot, dry, and bright weather of the spring, summer, and early autumn. We have to go back to 1885 for a warmer February, and to 1883 for a wetter one. March was a very bright and dry month, with very warm days but many frosty nights. The amount of sunshine recorded was more than we have had in any March or April since the record began in 1881, and more than the average amount for June, July, or August. April proved to be the warmest and driest for at least seventeen years. May was another fine and warm month. June

a fine, dry, and warm month. The maximum temperature 83.8° is the highest we have had in June since 1878. July brought us a break in fine summer weather, and was a rather showery month. August and September were fine and dry months. October was a bright month. None of the previous twelve Octobers had as much sunshine. The flowers in the garden were untouched by frost till quite the end of the month. A great crop of all autumn fruits and berries. Strawberries fruited a second time. Mean temperature of the year was 49.4°; mean temperature of the air at 9 A.M., 49.9°; mean temperature of soil 1 foot deep, 49.1°. Total rainfall, 20.11 inch; rain fell on 165 days. Total sunshine, 1515 hours, being 288 hours above the average. There were sixty-six days on which no sunshine was recorded, and 109 days on which it shone for at least half the time it was above the horizon. The highest reading of the barometer during the year was 30.752 on December 30th. Lowest reading of the barometer during the year was 28.694 on December 20th."

— PETROLEUM AS AN INSECTICIDE FOR CUCUMBERS AND MELONS.—In reply to "W. B.," page 88, I have tried petroleum several times for syringing Melons and Cucumbers, but have in each case found it scorched the edges of the leaves, although I used it very carefully with a solution of softsoap. The following is my method, and if any of the numerous readers of "our Journal" can give me a better one I shall be glad to try it:—Thoroughly dissolve about 2 ozs. of softsoap in a three-gallon can or pail of warm water, then add a wineglassful of petroleum. This should be well mixed by filling a syringe and forcing it back again into the pail several times. When applying the liquid to the plants a very fine rose should be used on the syringe, or employ a jet and work the spray with the finger, keeping the liquid well mixed. The above is not a strong solution, but I think it is as much as the plants will bear without injury to the foliage. I use it for mealy bug.—A SINGLE-HANDED GARDENER.

— PEPPER CULTIVATION.—Considerable difficulty appears to be experienced at the West Indies in the successful cultivation of pepper, for which a market might readily be found in the United States. Mr. R. Derry, Assistant Superintendent, Garden and Forest Department, Straits Settlements, now in this country on leave, has supplied the following account of the method of cultivation pursued in the colony. The method usually adopted with pepper in the Straits Settlements is as follows:—Fruiting vines are set aside as stock plants for propagating. This is done by layering, but only strong branched shoots are selected, and all superfluous shoots are removed. It is necessary to be careful about the selection of shoots for layering, as certain shoots never produce fruit. When rooted the young plants are transplanted to prepared holes, and, when the Vine commences growing, posts are planted for support. Posts are preferred from large trees of durable wood, split up, about 10 feet long and about 10 inches wide, varying from half an inch to 6 inches in thickness. The vines are carefully tied and trained on the posts, all superfluous shoots pruned until the plant reaches the top of the post. When growing the plants are kept mulched with burnt earth, and dressed with liquid manures as soon as fruiting commences. During hot weather the roots are protected with straw of some kind. The fruits are picked when red, and kiln-dried.—(Kew Bulletin.)

AUSTRALIAN TIMBER TREES.

THERE exists a widely prevalent idea that Australia possesses few kinds of timber suitable for industrial purposes, other than the Jarrah and Karri hardwoods of Western Australia. This, however, is a grave mistake. In New South Wales alone there is an abundance of timber of various descriptions, admirably adapted for building and other purposes, especially carriage, boat, and ship construction. Forests extend over the whole of New South Wales, frequently extending for many miles, the trees belonging chiefly to different species of the Eucalyptus tribe. Many of the more valuable timber trees are found on ridges and hillsides in places frequently too rough for cultivation.

According to the Government Statistician of New South Wales, Australian hardwood trees are remarkable for the great size of the beams which may be obtained from them, as well as for the extreme toughness and durability of their wood; the Grey Ironbark having a resistance to breaking equal to 17,900 lbs. per square inch, as compared with a mean of 11,800 lbs. for English Oak, and 15,500 for Teak. None of the other timbers have so high a resistance to breaking as this description of Ironbark, but nearly all the varieties have a greater strength than Oak. The quality of the wood is materially influenced by the soil on which the trees grow, and the absence of branches for the greater portion of the height enables the timber to be obtained to the best advantage; and as full-grown trees of most varieties are rarely less than 100 feet high, with corresponding girth, the quality of timber obtainable is very large.

The softwoods of the colony are chiefly in the brush forests of the

coastal district, and some of the least known of the brush forest trees have wood grained and beautifully marked, and capable of receiving the highest polish, while others are fragrantly perfumed. These woods are adapted to the finest description of cabinet-making, and it is strange that their merits should have so long escaped attention. Amongst the chief varieties of woods of this class may be mentioned the Red Cedar, the wood of which, somewhat resembling mahogany, is admirably adapted for the finer kinds of cabinet makers' work. Some

largely exceed the exports. The imports, however, are chiefly pine and softwood. The pine grown in the colony is in some respects inferior to both oregon and kauri, hence the large importation of these timbers, but the softwoods of the country will bear favourable comparison with those of any part of the world, both for durability and beauty. They are easily wrought and well adapted for the finer kind of carpentry and cabinet work, and it is only because they are so little known that the softwoods of the brush forests have not been more extensively used.



FIG. 17.—EUCHARIS LOWI.

of the Cedar trees grow to immense size, as much as 2500 cubic feet of valuable timber having been obtained from one tree. Among other trees may also be mentioned the Rosewood, Tulipwood, Yellowwood, White Maple, White Beech, Myall, Marblewood, Mock Orange, and many others. Besides their use for cabinet-making, many of the brush timbers are of great utility for the rougher kinds of carpentry; while some, both hard and soft woods, are admirably adapted for coach-builders' and coopers' work.

Colonial deal is an excellent timber, and is obtained in very large scantling, the tree frequently reaching 120 feet in height. It is soft, close grained, easily wrought, and remarkably free from knots. Its use, therefore, is extensive for cabinet makers' work and house fittings. Although New South Wales is endowed with great wealth of timber, not only of hardwood, but of softwood and pine, the imports very

EUCHARIS LOWI.

THIS very distinct Eucharis was introduced by Messrs. Hugh Low and Co., Clapton, some time ago, and when exhibited at the Drill Hall, Westminster, last year, the Floral Committee of the Royal Horticultural Society adjudged an award of merit for it. The illustration (fig. 17) which has been prepared from a sketch taken on the occasion mentioned, portrays the character of the flowers. They are as large as those of *Eucharis grandiflora*, and remarkably pretty. The distinctiveness embraces the incurving of the segments, which are pure white, with yellowish green where the stamens join the corolla. The leaves are borne on tall footstalks, and are similar in shape to the foliage of *E. candida*, though considerably larger.



CHRYSANTHEMUMS FROM PORTUGAL.

DURING the early part of December I received some blooms from a cultivator in the Isle of Man, the produce of seedlings raised from seed direct from Portugal. I was not aware that that country was at all famed for Chrysanthemum seed production. The blooms in question possessed much merit, being massive without being coarse in the florets. In colour the best was a pleasing golden bronze. I shall look forward with some interest to the development of blooms of this variety in the South of England, as I am growing plants of it this year. The result the first year from the seed is certainly encouraging to the country from whence the seed came.—E. MOLYNEUX.

CHRYSANTHEMUM, MRS. L. C. MADEIRA.

IF Mr. W. Wells will carefully read what I wrote on page 55, he will see that I referred to this variety most favourably as a late decorative sort, but as an exhibition flower I feared it resembled Mabel Ward in the manner of its floret formation. I said not one word as to its colour, therefore Mr. Wells has little cause to complain in that respect. I have no reason to doubt but that the blooms I saw in 1892 were other than Mrs. L. C. Madeira. My object in referring to it was to disseminate information, gained from actual observation, amongst a class of cultivators which are largely interested in all new introductions, irrespective of the financial value of any particular variety.—E. M.

WOLVERHAMPTON CHRYSANTHEMUM SOCIETY.

AMONGST the most successful Chrysanthemum Shows of 1893 the first Exhibition of the Wolverhampton Chrysanthemum Society can be placed. This has been brought about by a most energetic Committee and indefatigable Secretaries (Mr. R. Craigie, Mr. Wheeler, with Mr. A. Dobbs as Amusement Secretary), and Mr. Macpherson, Treasurer. Several unsuccessful Shows have previously been held. I enclose you the balance-sheet to show what a success we made of it. It is wonderful, considering that the plants were half grown before the Society was started, and you can judge the amount of work that was done by the Committee. To prove what individual members can do, Mr. Bradley (the Vice-Chairman) and myself collected close upon £50 in a few weeks. With the financial assistance of the surrounding gentry and the still indomitable spirit of the Committee, and with a more extensive schedule, a greater success is anticipated for 1894. The Society emanates from the Gardeners' Mutual Improvement Society, which also was started last year, and has now upwards of 100 members.

Now I am writing I would like to inform the readers of the *Journal* in this district that I should be pleased to see them at the lecture on the "Cultivation of Fruit, Flowers, and Vegetables," illustrated by limelight views to be given by myself at the Lecture Hall Free Library on February 10th.—G. A. BISHOP, *Wightwick Manor Gardens*.

[The balance-sheet shows a satisfactory and creditable record in the time. Expenditure, nearly £200; balance, upwards of £22.]

THE JAPANESE CHRYSANTHEMUM ELECTION.

It seems that Mr. Rainton (page 93) is anxious to know why Mrs. A. Hardy Chrysanthemum was so low down in the voters' list. My answer is this: Would anyone be doing the right thing, or doing justice to those whom the selection was compiled for, to vote or add a variety which I should say not one grower out of fifteen could grow, or I might say get a bloom fit for exhibition? Why this is so I cannot understand, and I must say I can endorse all that Mr. Rainton says in its favour. I have grown it fairly well myself ever since it was sent out; in fact I have shown blooms every season except the year before last, then the flowers were very late with me. Growers who could get blooms of Mrs. A. Hardy like Mr. Rainton speaks of, would do well to have one in their stand of twenty-four Japanese. I should like to say a few words about another Japanese. No doubt many would wonder why I placed Robert Owen so high up in my list, but left it out of the twelve. It is my opinion that Robert Owen is the grandest incurved Japanese yet in commerce, but would it be in its right place on the twelve bloom stand? I do not think so. I should like to see good prizes offered for six blooms: two of Robert Owen, two of Duke of York, and two of Miss Anna Hartshorn, this would be a very pretty stand.—JOHN APLIN, *Hasfield Court Gardens, Gloucester*.

YOUR correspondent Mr. J. Rainton (page 93) asks why Mrs. Alpheus Hardy takes so low a place in the voting list. Speaking for myself, and I imagine for many others of those who voted, the reason is to be found in the fact that the selections requested were mainly to assist those "who are taking up the cultivation of the Chrysanthemum for the first time," i.e., beginners.

Like your correspondent I have experienced no great difficulty in obtaining good show blooms of the variety in question, although I must confess that they have not quite attained the dimensions which he gives

ns. "Upwards of 8 inches in diameter" is large for Mrs. Alpheus Hardy. But who would call the variety a "beginner's" flower? It is notorious that, for some reason or other, many growers, not by any means to be classed as "beginners," have experienced a certain difficulty with this variety, a fact which is amply attested by the comparative rarity of its appearance on the show board.

For the same reason I had excluded from my selections many "experts' varieties. For example, Silver King. I see that seven voters included this within their twenty-four; but, although it is a seedling of my own raising, I did not vote for it. It is unquestionably an "expert's" variety, difficult for the beginner, but capable of fine development at the hands of the more experienced. Mr. E. Beckett, who includes it in his list, showed it splendidly at Watford, but then Mr. Beckett is an "expert" in the first rank.

I think that the selections must be interpreted through the medium of the terms of the invitation issued, and, if this be done, the position or absence of many varieties will be the better understood.—CHARLES E. SHEA.

THE idea of getting the opinion of the principal growers and judges to give their selection of what they consider to be the best varieties now in cultivation is a good one, and must be of immense service to provincial growers and others who have not the opportunity of seeing and knowing the latest addition to this ever popular section. It has come at a most opportune season, for extensive lists are published by trade growers, and many of the varieties are no doubt most beautiful, but it would be almost impossible for a private grower to try them all.

The thanks of all cultivators are due to the Editor of the *Journal of Horticulture* and Mr. Molyneux for carrying out the suggestion of "A D.," for it will be wonderfully interesting in a few years' time. The publication of the list forms food for reflection, independent of the reverting thoughts on the rise and progress of the Japanese section. Then there are the consensus of opinion as to what constitutes a good and typical Japanese Chrysanthemum, and the unanimity of judges showing the standard that exhibitors should work up and aspire to. In the varieties at the head of the list we have all the requirements in size, form, colour, and habit. When we get away from the top it would be a difficult matter to put them in order according to merit, or to give one the preference over the other. It is a question of colour entirely; hence in the selection for twelve many would prefer to grow Mdle. Marie Hoste to Stanstead White, or G. W. Childs to Wm. Seward. Some varieties are good at times, but are not so constant and reliable as one would wish, while others have some little defect that removes them slightly from the typical flower, but no exhibitor could possibly do wrong by growing the first fifty; although the end of the list embraces many sterling varieties seen out for the first time this year, and consequently are little known, but probably some of them of sufficient merit to oust others from the front rank in a few years' time.

The fact of only having one vote does not detract from the merit of the selection. By publishing the individual lists as you are doing, it will show the estimation held of some varieties in different parts of the country, and it will no doubt confirm what I have observed for a long time—the partiality, if I may so term it, of certain varieties to some localities. In officiating for some years in various parts of the kingdom I have constantly noticed how well a certain variety is grown in a particular place. Some few years ago I used to be amazed at the fine examples of that peculiar variety Triomphe de la Rue des Châlets exhibited year after year at Ascot. At Northampton the incurved variety Jardin des Plantes comes fine, and is very conspicuous in the stands. Mrs. Alpheus Hardy seems to enjoy the air at Bournemouth, for it was exhibited more frequently and in better condition than usual, and for the past two seasons Mdle. Marie Hoste has taken the lead amongst the whites at Winchester, being shown exceptionally good.

Some most interesting information from America of the peculiar behaviour of some of our leading and standard varieties tends to confirm my observation, which is the result of one of two things. Either the soil or air suits the varieties in particular, or the growers there are in possession of an extra good strain.

In dissecting the colours of the first twenty-four varieties I find they are seven pink and rose shades, six bronze and orange, five whites, four yellows, and only two crimsons; and in the twelve selection there are two pinks, three bronze, three whites, two yellows, and two crimsons, a very good proportion for a stand of twelve varieties.

Although we have been loth to recognise the type of the Japanese incurved as varieties to be encouraged, there is no doubt but that, with such varieties as Robert Owen, Louise, and Viscountess Hambleton as pioneers, they are boldly pushing their way to the front, and there will soon be room for a separate class for them. No one can look on the fine, solid, shell-like florets built up and forming a flower of such substance without a note of admiration for this section. The blooms of Robert Owen exhibited at Kingston were very fine, and I must say, although not a typical Japanese form, one or two in a stand of twenty-four or forty-eight varieties adds variety and a charm to the exhibit.—C. ORCHARD, *Bembridge, I. W.*

No one can have welcomed more heartily than myself the appearance of Mr. Molyneux's very interesting and valuable Chrysanthemum election (page 63); in fact, it has supplied a want long felt by a large class of Chrysanthemum growers—so numerous and bewildering have the lists of new varieties become, and so very recently have many of these new varieties been introduced.

For my own part I do not regard that election as in any way a rival to my analysis which appeared in the *Journal of Horticulture* a fortnight before (page 21), but rather, as Mr. Molyneux happily puts it, as an "appropriate pendant" to it. Our methods are altogether different, and so also are the objects we have in view. Mr. Molyneux tells us what sorts we ought to grow in order to be quite "up to date," and my analysis, among other things, what kinds have been most frequently staged in recent years, and also at the last National Chrysanthemum Exhibition, this indicating the fluctuating value of varieties in general cultivation.

It should be borne in mind that it is not every grower or exhibitor who can afford to keep his stock of varieties strictly "up to date"—up to Mr. Molyneux's high standard, although many of us will, no doubt, now endeavour to get as near to it as our purses will allow. On reference to the trade catalogue of a well-known specialist, I find that Mr. Molyneux's first twenty-four Japs would cost on an average 1s. 2d. apiece, whereas the top twenty-four in my analysis can be had for about 4½d. a plant. Now this question of expense must necessarily be a consideration to many. In the last-named twenty-four are included one 1892, six 1891, and two 1890 varieties, while half the total number are among Mr. Molyneux's leading twenty-four. In the third column of my analysis may, however, be found a still more modern list for those who prefer it. Taking the twenty-four Japs most frequently staged at the 1893 exhibition of the National Chrysanthemum Society we find only eight which do not also secure places in the first twenty-four in the election. Of these exceptions Puritan appears in that list at No. 28, Boule d'Or at No. 29, Miss A. Hartshorn at No. 30, Gloire du Rocher at No. 33, Alberic Lunden at No. 53, while Madame J. Laing comes in with a single vote. As to the remaining two which do not appear in Mr. Molyneux's lists at all, I can only say that Mr. A. H. Neve was staged in as many as thirty-five stands at the Royal Aquarium last November, and Val d'Andorre in twenty-six stands.

Then there is another consideration. We small growers may go to what we cannot but regard as considerable expense and secure a large number of "sterling novelties," but who is to tell us how to grow them to the best advantage? To make room for these we cast aside as worthless many of our recently acquired (for there are few sorts now grown possessing any history worth mentioning) and fairly tested favourites, only to find ourselves with a number of new varieties with the "manners and customs" of which we have not had the slightest experience. Then, again, should there be an overwhelming demand by all classes of growers for certain leading novelties, this must undoubtedly result in over-propagation and its attendant evils.

As long, therefore, as Japanese Chrysanthemums remain in their present state of rapid transition my analysis can never hope to be altogether "up to date," and will always require Mr. Molyneux's welcome and "appropriate pendant" to supply its deficiencies. In this bewildering section I can undertake to cater fairly well for the average grower and exhibitor, but those who require, and can afford to keep their collections thoroughly abreast of the times, I must refer them to Mr. Molyneux and his able band of up to date experts.—E. M., *Berkhamsted*.

VOTERS' LISTS.

(Concluded from page 94.)

Mr. G. INGLEFIELD, Tedworth Gardens, Marlborough, Wilts.

*Viviand Morel	*Wm. Tricker	Mrs. C. Harman Payne
*Charles Davis	*Florence Davis	Puritan
*Mdlle. Thérèse Rey	*W. H. Lincoln	G. C. Schwabe
*Edwin Molyneux	*Etoile de Lyon	Le Verseau
*Col. W. B. Smith	Stanstead White	Mrs. F. Jameson
*Avalanche	Gloire du Rocher	Mdlle. Marie Hoste
*Wm. Seward	Alberic Lunden	John Shrimpton
*Sunflower	Lord Brooke	J. S. Dibbens

Mr. J. JELlicoe, The Gardens, Camp Hill, Woolton, Liverpool.

*Miss Dorothea Shea	Col. B. W. Smith	*Mrs. E. D. Adams
Princess May	*Mdlle. Thérèse Rey	Florence Davis
*Charles Davies	*Eda Prass	Stanstead White
William Seward	*Robert Owen	*Viviand Morel
President Borel	*Silver King	Mdlle. Marie Hoste
Waban	G. C. Schwabe	Sunflower
*Mrs. C. H. Payne	*Etoile de Lyon	W. Tricker
V.-President Audiguier	*E. Molyneux	*Boule d'Or

Mr. JOHN LAMBERT, Powis Castle Gardens, Welshpool.

*Viviand Morel	*Lord Brooke	W. H. Lincoln
*Etoile de Lyon	*Sunflower	Boule d'Or
*Florence Davis	Mdlle. Marie Hoste	Lilian Bird
*Beauty of Exmouth	*Robert Flowerday	Alpheus Hardy
*Robert Owen	*W. Seward	Mrs. F. Jameson
*Avalanche	Miss Anne Hartshorn	Beauty of Castlewood
*Edwin Molyneux	Golden Wedding	G. C. Schwabe
*Colonel Smith	Viscountess Hambledon	Charles Blick

Mr. J. P. LEADBETTER, The Gardens, Tranby Croft, Hull.

*Viviand Morel	*Mdlle. Thérèse Rey	Mrs. A. Jacobs
*Charles Davis	*Mrs. Harman Payne	Violet Rose
*W. H. Lincoln	*Col. W. B. Smith	W. Tricker
*Florence Davis	*C. W. Wheeler	Golden Wedding
*Waban	Mrs. R. F. Jameson	*Edwin Molyneux
Mrs. E. D. Adams	Lord Brooke	Silver King
*R. C. Kingston	E. A. Carrière	Etoile de Lyon
*Mdlle. Marie Hoste	Lizzie Cartledge	Mrs. E. W. Clark

Mr. W. H. LEES, Trent Park Gardens, New Barnet, Herts.

*Mdlle. Thérèse Rey	*Stanstead White	John Shrimpton
*Edwin Molyneux	W. H. Lincoln	Puritan
*Col. Smith	Miss Anna Hartshorn	Louise
*Chas. Davis	Mdm. E. A. Carrière	Chas. Blick
*Florence Davis	*G. C. Schwabe	*W. Tricker
*Viviand Morel	*Mrs. F. A. Spaulding	Mrs. Bryceson
*Sunflower	Mdme. Cambon	Gloire du Rocher
*Mrs. F. Jameson	Mdlle. Marie Hoste	Etoile de Lyon

Mr. JOHN MACHAR, Corona, Broughty Ferry, Forfarshire.

*Viviand Morel	Etoile de Lyon	Mrs. Falconer Jameson
*Ed. Molyneux	*Mons. Bernard	Florence Davis
*Sunflower	*W. H. Lincoln	Mrs. E. Becket
*Stanstead White	*W. Tricker	Charles Davis
*Col. W. B. Smith	*Boule d'Or	Madame John Laing
*Viscountess Hambledon	G. C. Schwabe	Sarah Owen
*Wm. Seward	Mdlle. Marie Hoste	J. S. Dibbens
*Avalanche	Puritan	Mrs. E. W. Clark

Mr. MEASE, Downside, Leatherhead, Surrey.

*Viviand Morel	*Sunflower	Mrs. C. H. Payne
*E. Molyneux	G. C. Schwabe	Florence Davis
*Mdlle. Thérèse Rey	*Mdlle. E. Rey	W. Tricker
*Col. W. B. Smith	*Beauty of Castlewood	W. Seward
Charles Davis	*Etoile de Lyon	Golden Gate
*Mdlle. Marie Hoste	*Stanstead White	Mr. F. Jameson
*Eda Prass	J. S. Dibbens	Excelsior
*R. Owen	W. H. Lincoln	Lord Brooke

Mr. E. MOLYNEUX, Swanmore Park Gardens, Bishop's Waltham, Hants.

*Viviand Morel	*Etoile de Lyon	Avalanche
*E. Molyneux	*G. C. Schwabe	Mrs. F. Jameson
*Mdlle. Thérèse Rey	*Stanstead White	Excelsior
*Colonel C. B. Smith	*Mdm. Octavie Mirbeau	Lord Brooke
*Mdlle. M. Hoste	Mrs. C. H. Payne	Le Verseau
*F. Davis	W. Seward	Waban
*Sunflower	W. H. Lincoln	Puritan
*C. Davis	Miss D. Shea	Robert Owen

Mr. N. MOLYNEUX, Rookesbury Park, Wickham, Fareham, Hants.

*Mdlle. Marie Hoste	Stanstead White	*President Borel
*Mdlle. Thérèse Rey	Princess May	Florence Davis
*E. Molyneux	*Wm. Seward	Golden Wedding
*Viviand Morel	Sunflower	Etoile de Lyon
*Boule d'Or	*Robert Owen	Mrs. F. Jameson
*Col. W. B. Smith	*Mrs. C. H. Wheeler	W. H. Lincoln
*Waban	G. C. Schwabe	Mrs. C. H. Payne
*Chas. Davis	Mrs. E. D. Adams	Avalanche

Mr. G. MUSK, The Gardens, Haverland Hall, Norwich.

*Viviand Morel	*Princess May	The Tribune
*Charles Davis	Florence Davis	Mrs. C. Harman Payne
*Mdlle. Thérèse Rey	*Lord Brooke	Mdlle. Marie Hoste
*Colonel W. B. Smith	*Miss Dorothea Shea	Puritan
*E. Molyneux	*G. C. Schwabe	Mrs. F. Jameson
*Avalanche	Stanstead White	Etoile de Lyon
*Sunflower	Excelsior	Silver King
*Wm. Seward	Robert Owen	J. Shrimpton

Mr. MYERS, Hinchbrook Park, Hunts.

*Viviand Morel	*Mdlle. Thérèse Rey	Florence Davis
*Charles Davis	*Etoile de Lyon	Waban
*Edwin Molyneux	Mdlle. Marie Hoste	*G. C. Schwabe
*Sunflower	*W. H. Lincoln Improved	W. Tricker
*Stanstead White	Mrs. C. H. Payne	W. Seward
*Avalanche	*Mrs. E. W. Clarke	Jules Tussant
*Col. W. B. Smith	Lord Brooke	Eda Prass
Golden Wedding	R. Owen	Mrs. F. Jameson

Mr. W. NEVILLE, Cornstiles, Twyford, Winchester, Hants.

*Viviand Morel	*Mrs. Ed. Adams	*Florence Davis
*Edwin Molyneux	*W. H. Lincoln	The Tribune
*Colonel W. B. Smith	Puritan	Mrs. Seward
*Mdlle. Marie Hoste	*Sunflower	G. C. Schwabe
*Mdlle. Thérèse Rey	Mrs. Bruce Findlay	Avalanche
*Stanstead White	*Golden Wedding	Charles Blick
Etoile de Lyon	Mrs. Dorothea Shea	Excelsior
*Mrs. C. Wheeler	G. W. Childs	Lord Brooke

Mr. C. ORCHARD, Bembridge, I.W.

*Viviand Morel	*Mdlle. Marie Hoste	*Duke of York
*Colonel W. B. Smith	Wm. Seward	Mr. E. D. Adams
*Edwin Molyneux	Sunflower	Florence Davis
*Mdlle. Thérèse Rey	*Louise	Wm. Tricker
*G. W. Childs	Avalanche	G. C. Schwabe
*Robert Owen	*Mr. C. Harman Payne	Excelsior
*Chas. Davis	W. H. Lincoln	Lord Brooke
*Golden Wedding	President Borel	Beauty of Exmouth

Mr. R. PARKER, Impney, Droitwich, Worcestershire.

*Mdlle. Thérèse Rey	*Sunflower	President Borel
*Mdm. A. Mirbeau	*G. C. Schwabe	Mdlle. M. Hoste
*Boule d'Or	*Golden Wedding	Etoile de Lyon
*Viviand Morel	*Stanstead White	Le Prince du Bois
*Col. Smith	Charles Davis	Mrs. F. Jameson
*E. Molyneux	William Seward	Avalanche
*L'Isere	W. H. Lincoln	Wm. Tricker
*Florence Davis	Mrs. E. Beckett	Le Verseau

Mr. C. PENFORD, Leigh Park Gardens, Havant, Hants.

*Vivian Morel	*Mrs. E. W. Clarke	*Avalanche
*Col. W. B. Smith	Alberic Lunden	Excelsior
*Florence Davis	W. H. Lincoln	*Mrs. F. Jameson
*W. Tricker	Primrose League	*Etoile de Lyon
G. C. Schwabe	*Chas. Davis	Lord Brooke
Mdlle. Marie Hoste	*E. Molyneux	Miss Anna Hartshorn
Mrs. C. H. Payne	*Sunflower	Mdlle. Thérèse Rey
J. Shrimpton	*Stanstead White	President Borel

Mr. CHARLES RITCHINGS, Reigate Hill, Surrey.

*Edwin Molyneux	Robert Owen	John Shrimpton
*Mdlle. Thérèse Rey	*President Borel	Charles Davis
*Colonel W. B. Smith	Mdlle. Marie Hoste	*Le Prince du Bois
*Avalanche	W. Seward	G. C. Schwabe
*Mrs. C. H. Wheeler	*Miss A. Hartshorn	Etoile de Lyon
*W. H. Lincoln	*Elmer d'Smith	Sunflower
*Vivian Morel	Puritan	W. G. Newitt
*Charles Shrimpton	Florence Davis	Excelsior

Mr. EDWIN ROWBOTTOM, The Gardens, The Priory, Hornsey, Middlesex.

*Mdlle. Thérèse Rey	Charles Davis	*Mr. E. Whittle
*Edwin Molyneux	Robert Owen	Alberic Lunden
*Vivian Morel	President Borel	Eda Prass
*Sunflower	*G. C. Schwabe	Richard Dean
*Col. W. B. Smith	*Avalanche	Mdlle. Marie Hoste
*Excelsior	*Golden Gate	Golden Wedding
*Stanstead White	*Duke of York	Louise
Violetta	Mdlle. Charles Molin	Etoile de Lyon

*Mr. W. RUSHTON, The Gardens, Cochno, Duntocher, Dumhartonsire, N.B.

*Charles Davis	*Mons. Bernard	J. Stanborough Dibbens
*Mdlle. Thérèse Rey	*Boule d'Or	Mdme. Edouard Rey
*Vivian Morel	*Col. W. B. Smith	Gloire du Rocher
*Edwin Molyneux	Excelsior	*Mdlle. Marie Hoste
*Viscountess Hambledon	Miss Dorothea Shea	*Mrs. E. W. Clarke
Mrs. C. Harman Payne	Princess May	Mrs. Falconer Jamson
*William Seward	*G. C. Schwabe	W. H. Lincoln
Stanstead White	J. Shrimpton	William Tricker

Mr. C. J. SALTER, Woodhatch Lodge Gardens, Reigate, Surrey.

*Miss Anna Hartshorn	Lord Brooke	Robert Owen
*Mdlle. Marie Hoste	*Edwin Molyneux	Florence Davis
*Colonel B. Smith	*Excelsior	Coronet
*W. Seward	*W. H. Lincoln	G. C. Schwabe
*Sunflower	C. Shrimpton	Avalanche
*Vivian Morel	*Mdlle. Thérèse Rey	Elmer d'Smith
Charles Davis	Golden Wedding	Waban
*Beauty of Castlewood	*President Borel	Mrs. Harman Payne

Mr. C. E. SHEA, Foots Cray, Kent.

*E. Molyneux	*W. H. Lincoln (imp.)	Avalanche
*Vivian Morel	Mrs. Falconer Jameson	Golden Wedding
*Sunflower	W. Tricker	President Borel
*Mdlle. Thérèse Rey	Florence Davis	*Robert Owen
*C. Davis	*Miss Dorothea Shea	Puritan
*Col. W. B. Smith	*Excelsior	J. Shrimpton
*G. C. Schwabe	Etoile de Lyon	W. Seward
Mdlle. Marie Hoste	Lord Brooke	*Stanstead White

If the variety were a little more proved I should be inclined to substitute President Borel for Excelsior in the first twelve.

Mr. H. SHOESMITH, Shirley, Croydon, Surrey.

*Mdlle. Thérèse Rey	*Wm. Tricker	*Eda Prass
*E. Molyneux	Lord Brooke	Mrs. C. Harman Payne
*Vivian Morel	*Stanstead White	Florence Davis
*Col. W. B. Smith	*Wm. Seward	Excelsior
*Sunflower	Golden Wedding	John Shrimpton
*G. C. Schwabe	Chas. Davis	W. H. Lincoln
*Robt. Owen	Miss Anna Hartshorn	Col. Chase
Mdlle. Marie Hoste	*President Borel	Mons. Bernard

Mr. W. TUNNINGTON, Calderstones, Allerton, Liverpool.

*E. Molyneux	*Stanstead White	President Borel
*Vivian Morel	*Wm. Seward	Florence Davis
*Etoile de Lyon	Col. B. Smith	Eda Prass
*Robert Owen	*Golden Wedding	W. E. Clarke
*Mrs. C. Harman Payne	Lord Brooke	Avalanche
*Mdlle. Thérèse Rey	Wm. Tricker	Mrs. F. Jameson
*Chas. Davis	*W. H. Lincoln Improved	W. F. Coles
*G. C. Schwabe	Mdlle. M. Hoste	Beauty of Exmouth

Mr. G. TRINDER, Dogmersfield Gardens, Winchester, Hants.

*Robert Owen	*Mrs. Wheeler	G. C. Schwabe
*Lord Brooke	*Mdlle. Marie Hoste	W. Tricker
*Col. W. B. Smith	*Etoile de Lyon	Gloire du Rocher
*Vivian Morel	*W. H. Lincoln	V.-President Audiguier
Charles Davis	*Avalanche	Beauty of Castlewood
*Sunflower	Duke of York	Golden Wedding
*Edwin Molyneux	Eda Prass	Miss A. Hartshorn
*Stanstead White	Silver King	Beauty of Exmouth

Mr. GEO. WOODGATE, Warren House Gardens, Kingston Hill, Surrey.

*Etoile de Lyon	*E. Molyneux	Waban
*Vivian Morel	*Chas. Blick	Excelsior
*Mdlle. M. Hoste	Silver King	V.-President Audiguier
*International	*Robert Owen	Mrs. F. Jameson
*Mdlle. Thérèse Rey	Chas. Davis	Lord Brooke
*G. C. Schwabe	*Sunflower	Golden Wedding
*Mrs. H. Payne	W. Seward	Beauty of Castlewood
*Col. W. B. Smith	Avalanche	W. Tricker

WHITE SWEET PEAS.

IN your issue of February 1st (page 90) "D." asks if any grower in this country knows anything of the merits of Emily Henderson Sweet Pea as compared with Queen of England and the Old White. I will, in reply, give my own experience in growing them. Last February I sowed four fairly long rows of Sweet Peas—two sorts in parallel lines. Emily Henderson and Queen of England side by side, and Mrs. Sankey and the Old White side by side. They all did well up to a certain point, though as the summer wore on the long-continued drought punished them. Emily Henderson throws a fine bold truss with three to five blooms on it, and excepting that it is more robust in habit, and, if anything, a little more floriferous, is identical with Queen of England. I came to the conclusion that the American variety (Emily Henderson) was neither more nor less than a carefully selected stock of Queen of England, both having the same creamy white or milk-white flowers, and, in general appearance, not materially differing from one another.

Mrs. Sankey is a totally different variety. It is not creamy white, but marble white or paper white, and can be distinguished in a moment from Emily Henderson by its having dark, reddish pedicels, while Emily Henderson and Queen of England have white pedicels, both of them. The seeds of Mrs. Sankey are black, while those of the other two named and the Old White have pale dun, or what are usually called white seeds. Mrs. Sankey is by far the purest white flower, but when grown alongside of the others has a cold, alabaster-like hue, that to my eyes is not nearly so pleasing as the warmer creamy white of the others. The Old White is still good if carefully selected, but the other three are improvements upon it, and for marketing they would sell much more readily because of their larger individual blooms and the greater number of blooms on the truss.

If "D." wants a good marketing Sweet Pea let me recommend to him Princess Beatrice, a charming pink, and in my opinion the best of all of the colour. It has been out for years now, but it holds its place in public favour.—SCOTIA.

MARLAY, RATHFARNHAM, CO. DUBLIN.

NEARLY seventy years ago, a slight description of Marlay, the seat of R. Tedcastle, Esq., was given in Loudon's "Gardeners' Magazine." These brief notes I am able to quote; they cannot fail to give additional interest, and will serve as a fitting introduction of an old place to readers of our day.

Prolivity was certainly not a fault of gardeners' pens in 1826; one now wishes for a little more of these jottings—pen pictures of the long ago. Their value for comparison it is needless to descant on; and we gardeners of modern times, I think, like to place ourselves in juxtaposition with the workers of bygone generations. By the courtesy of Mr. Irwin, the head gardener, I am able to quote these notes from vol. i., page 191, of the above-mentioned journal. The writer says:—

"Marley, the seat of — Latouche, Esq., is delightfully situated at the foot of the range of hills, which on this side form the background to the environs of the city. The gardens and pleasure grounds were till of late years in great repute. We understand that the late Mr. Leggett, a landscape gardener of original talent, laid out the grounds. He has evinced considerable taste in the management of the mountain rivulet which is conducted through the demesne. By many the cascades are considered too numerous, causing in some places a greater degree of placidity than is considered consistent with the character of the stream. The demesne, generally speaking, has been much renovated within this few years by Mr. Dunne."

Fortunately this piece of the silent past has not been since improved out of existence; Nature has now done her part distributing her lichens and creepers with no niggardly hand, adding those charms, peculiarly work of her own. The stream, fresh from its birthplace in the eternal hills, still leaps over Leggett's cascades, singing its low refrain, "Men may come and men may go, but I go on for ever."

This is the southern end of this demesne of 400 Irish acres, at which point our ramblings and notetakings commence. My guide takes a bec-line for a gigantic Ash, while I feel in my pocket for that tape which is at home, but the want is forestalled, and this fellow (not the "guide") is 16 feet 8 inches round the waist at 3 feet from the ground, with a head 90 feet across. From this we go on and look up at a legion of noble Beech, Elms, Chestnuts, Firs, and some grand old Cedars of Lebanon; one tapes 14 feet 3 inches, a stately trunk with but little apparent difference in its girth far up. These fine Cedars appear to me to attain that dignity amongst trees that an old cathedral does in a town. A few years since, where I then was, one had to be felled (not the cathedral); I say had, for only necessity would excuse the sacrilege. Somehow these Cedars have always been associated in my mind with those historical ones Solomon employed in building his temple, hence the idea obtained with me that as timber it should be of exceptional value; but the timber merchant disabused my mind of that idea, and it had to go in with the common herd of Beech. Alas! for such an end, I have never been quite happy about it since.

Pardon the digression, I am now back in Marley on the clean, hard walks, contrasting favourably with the country roads outside on a winter's day. The polished foliage of the Laurels atones for the timber trees, now in their undress; some old Portugals undesecrated by shears are very fine. A pretty lake kept scrupulously free from weeds on which glide swans "with snowy sail outspread," gives that variety which only water can. I had previously had a glimpse of this on a

summer's evening when the silvery sheen of hundreds of trout rising to the flies filled one with unholy longings that the most humble disciple of old Izaak Walton can understand. At the eastern end of the lake a stone bridge is a happy illustration by some deft hand of rockwork building, just sufficiently festooned with creepers; it makes a charming picture which would not escape an artist's eye, nor indeed has it, for it has formed the subject for a canvas which has been exhibited. Near here is the pretty and commodious farm steward's house. From this end of the demesne a bold sweep of open lawn carries the eye to the mansion, old fashioned, roomy, and unpretending, on the north side of which lays the gardens. Detouring through the trees which still claim attention, and getting further from the shelter of the friendly hills, we see some evidence of rough treatment at the hands of Boreas, notably so in some Silver Firs ambitious to overtop their neighbours, their top masts have been swept away. There are some lordly Elms, one girths 13 feet, and Mr. Irwin tells me of one blown down a few years since, a section of the trunk 17 feet long, weighing $6\frac{1}{4}$ tons when put down on the timber carriage; I need hardly say that vehicle broke down.

Near the mansion is a group of historic looking Yews—one measures 12 feet round a solid stem just below where it forks into many branches. These carry one back to monastic times. Doubtless Marlay's trees had their share of admiration from Mr. Leggett when busy building his cascades. On the north side of the mansion *Pyracantha* reaches the 34 feet to the parapet, framing the windows in green; on the eastern end *Cotoneaster Simonsi* does the same. The manner in which Mr. Irwin trains this *Cotoneaster* is worthy of notice. Two lodges, bright happy-looking homes, were covered with it. Its ductile branches are very amenable to the mathematical precision in which he has it trained, following the outline of windows and doors. Here it was retaining its foliage, which it does not with me in the bush form.

In leaving the gardens to the last it may be thought I have grasped my subject at the wrong end—the orthodox manner in which a boy catches hold of a cat, viz., by its tail; but the feature of Marlay, to me, is its trees, though the gardens of 5 Irish acres contain the finest range of vineries and Peach houses in the county. I notice in a span-roof plant house of several divisions some fine plants of *Odontoglossum pulchellum majus*, and it is worth remarking that they are given much more heat than is usually accorded to this class, with the happiest results, being exceptionally vigorous and bristling with flower spikes. *Vanda Stangeana* was flowering in the same division, and a plant of the Australian *Dendrobe*, Hilli, was carrying six fine spikes.

The range of vineries, 190 feet long, looked the picture of cleanliness, and, of necessity, bareness too at this season. The Peach range is 180 feet long, and this also calls for no remarks now, beyond saying they have yielded honours to Mr. Irwin for years past at the Public Shows. We peep at the *Chrysanthemums*, now in their baby stage, but will turn into giants under his hands later on, though they give food for discussion now, for the guide was a past master in that art when I was but a novice. Mrs. Tedcastle is a lover of hardy flowers, and I have seen some beautiful plants from these borders, which are now in their winter sleep.

Reader, you have figuratively been with me through this old Irish demesne. I trust it may have afforded you some moiety of the pleasure it gave me, though viewed under the chilling aspect of a winter's day.—E. K., *Dublin*.

WRIGHTIA ZEYLANICA.

THIS plant is very effective when in bloom, but it does not seem to be generally cultivated in gardens. It is a member of the same family as the Vincas, the Allamandas, the Oleanders, and the *Tabernæmontanas*, and to the last-named the flowers bear some resemblance. These are pure white, the corolla five-lobed, with a peculiar irregularly cut corona-like appendage at the base of the lobes, such as is seen in other related plants. The general form of the flowers and leaves is shown in fig. 18. *Wrightia zeylanica* requires a stove temperature, and being of loose habit, though not a climbing plant strictly speaking, it succeeds best trained to the roof of a house. A compost of turfy loam and peat or leaf soil and good drainage are requisite whether it be planted out or in a pot.

TREES AND SHRUBS.

WE hail with pleasure the publication of a much-needed work, by Mr. A. D. Webster, of Woburn, entitled "Hardy Ornamental Flowering Trees and Shrubs." Since Loudon's great work, the "Encyclopedia of Trees and Shrubs," appeared we have had nothing that filled the blank which that created since it has been out of print. It has often surprised us that the work has not been taken in hand before, and it can only be accounted for by the lull there has been of late years in the planting of ornamental flowering trees and shrubs. Now, however, since the taste for these has revived, we trust that this useful volume will tend to increase it. As a specimen of the work we extract the following:—

"*Ribes alpinum pumilum aureum*.—Golden Mountain Currant. The ordinary green form is a native of Britain, of which the plant named above is a dwarf golden-leaved variety.

"*R. aureum*.—Buffalo Currant. North-West America, 1812. In this species the leaves are lobed and irregularly toothed, while the flowers

are yellow, or slightly reddish-tinted. It is of rather slender and straggling growth. *R. aureum præcox* is an early flowering variety; and *R. aureum serotinum* is valued on account of the flowers being produced much later than are those of the parent plant.

"*R. cereum* (syn. *R. inebrians*).—North America, 1827. One of the dwarfer growing species of Flowering Currant, forming a low, dense bush of Gooseberry-like appearance, but destitute of spines. By May it is in full flower, and the blooms, borne in large clusters, have a pretty pinkish tinge. The foliage is small, neat, and of a tender green that helps to set off the pretty flowers to perfection. It is a native of North-West America, and perfectly hardy in every part of the country. Though not equal in point of floral beauty with our common Flowering Currant, still the miniature habit, pretty and freely produced pink-tinted flowers, and fresh green foliage will all help to make it an



FIG. 18.—WRIGHTIA ZEYLANICA.

acquisition wherever planted. Like the other species of *Ribes* the present plant grows and flowers very freely in any soil, however poor.

"*R. floridum* (syns. *R. missouriense* and *R. pennsylvanicum*).—American Wild Black Currant. North America, 1729. This should be included in all collections for its pretty autumnal foliage, which is of a bright purplish bronze.

"*R. Gordonianum* (syns. *R. Beatonii* and *R. Loudonii*) is a hybrid between *R. aureum* and *R. sanguineum*, and has reddish yellow tinged flowers, and partakes generally of the characters of both species.

"*R. multiflorum*, Eastern Europe (1822), is another desirable species, with long drooping racemes of greenish-yellow flowers, and small red berries.

"*R. sanguineum*.—Flowering Currant. North-West America, 1826. An old inhabitant of our gardens, and well deserving of all that can be said in its favour as a beautiful spring-flowering shrub. It is of North American origin, with deep red and abundantly produced flowers. There are several distinct varieties as follows:—*R. sanguineum flore-pleno* (Burning Bush), with perfectly double flowers, which are produced later and last longer than those of the species; *R. sanguineum album*, with pale pink, or almost white flowers; *R. sanguineum atro-rubens*, with deeply coloured flowers; *R. sanguineum glutinosum* and *R. sanguineum*

grandiflorum, bearing compact clusters of flowers that are rosy-flesh coloured on the outside and white or pinky-white within.

"R. speciosum.—Fuchsia-flowered Gooseberry. California, 1829. A Californian species, remarkable for being more or less spiny, and with flowers resembling some of the Fuchsias. They are crimson, and with long, protruding stamens. As a wall plant, where it often rises to 6 feet in height, this pretty and taking species is most often seen.

"The Flowering Currants are of unusually free growth, and are not at all particular about soil, often thriving well in that of a very poor description. They are increased readily from cuttings and by layers."

But why does Mr. Webster ignore such genera as Hedera, Cissus, and Ampelopsis, and give the two Periwinkles? There are some very beautiful Ivies in cultivation that might well find a place in such a work, but the genus is not even named. We observe some typographical errors, which rather blemish a work which is otherwise remarkably well done—as for instance, Ailanthus for Ailantus, Symphoria racemosus for S. racemosa. The blemishes, however, are not very numerous, and may be removed by careful editing when a new edition is called for. No doubt many readers would be glad to see a chapter on the appropriate grouping and tasteful arrangement of shrubs, also practical hints on pruning and general management, which the author could well supply.

The flowering seasons of trees and shrubs are given, and the compact little work, of some 150 pages, is enhanced in value by a good index. It is published at the "Gardening World" office, 1, Clement's Inn, Strand, W.C.

A BOOK of a very different character has been sent to us, and we acknowledge it here. It is by no means a new book, but it will be new to many persons who enjoy readable matter on trees. It is entitled the "Uses and Beauties of Trees," is written by Mr. John Wilson, Leazes Park, Newcastle-on-Tyne, and published by Mr. J. M. Carr of that city.

The writer was evidently in love with his subject, and gives much historical information, also embodies poetical allusions to the trees on which he treats. Several of the botanical names would have been presented a little differently had the proof sheets been revised by an expert in nomenclature. It is creditable to a park-keeper to have written the interesting book.



HARDY FRUIT GARDEN.

Apricots.—Utilise every favourable opportunity to overhaul the trees on walls, first unloosening them, then cutting out old bare wood, its place being taken by the best of the younger branches, selecting those, if possible, that originate from the lower parts. The readjustment of Apricot trees ought to be done annually, removing any ill-placed or unsatisfactory branches before they grow too large and thick. This obviates the evil effects of gumming, which almost certainly follows when large strong limbs are amputated. It also ensures the better furnishing of trees with young vigorous wood, equalises the flow of sap, and maintains fertility over a longer period.

Pruning.—Extreme measures in pruning are ill-adapted to the Apricot, the most successful results following when pruning can be reduced to a minimum. Apricots bear freely on well-ripened shoots of the previous year, also on spurs formed by shortening back shoots not wanted for extension or furnishing young bearing wood. In addition to these spurs are also naturally formed, and wherever such are suitably placed they should be retained in preference to artificial spurs. The overcrowding of spurs should be avoided, and undue elongation of spur clusters prevented by judiciously shortening projecting portions either at the winter pruning or when the trees are examined after the fruit is gathered. The annual shoots reserved for bearing ought to have the immature points removed down to firm wood, being usually when thus shortened about a foot or 15 inches in length. Weak shoots cut in closer. Those reserved with the intention of originating new growth must also be pruned to a strong wood bud.

Training.—The fan method of training admits of branches being easily secured to take the place of worn-out parts. In training shoots and branches to the wall allow them room in the ligatures for the wood to swell naturally. The material ought to be soft and pliable, but strong, also clean and free from insect pests. Avoid injuring wood or shoots in the process of nailing and training, which must be finally completed before the flower buds swell.

Peaches and Nectarines.—Trees well managed in the summer in respect of disbudding and regulating the shoots, so as not to retain little more than are necessary for forming successional bearing shoots to take the place of those cut out in autumn after the fruit was gathered, ought not now to require severe pruning.

Thinning Branches.—The bulk of the pruning and thinning, however, is often left for the winter, and in this case the trees, if not already

unloosened from the walls, ought to be detached at once, old and half exhausted wood cut out, together with a general thinning of some of the leading branches should these be crowded or extending too far. The longest may be shortened at a point which will admit of well situated side growths being laid in to fill up the space. To shorten strong branches back to the main stem is not advisable, especially with vigorous trees. Any of medium strength or weakly will endure shortening to this extent if found necessary. The main object in the first preliminary thinning is to reduce the wood to a reasonable amount, so that when re-arranged on the walls it will not be unduly crowded.

Pruning.—The next point is to cut away all the old bearing wood where it has not previously been removed, which will leave only the youngest shoots, termed successional growths, for nailing or tying in. These will be of various lengths and differ in vigour. Some may be strong and extra long, but if well ripened to the terminal bud they can be retained at full length. The majority of shoots, however, are not well ripened to the extreme tips, especially when the wood has been crowded, therefore it is essential that the immature portions be removed. In shortening such or any young growths which need reducing in length they must be pruned to a wood bud. If not to a single wood bud, a triple bud ought to be selected, a wood bud in this case being situated between two blossom buds. Shoots cut to a blossom bud invariably die back. It is important that all shoots when in bearing have a terminal growth, so that sap may be drawn to the fruit. Weak shoots if retained at all must be critically examined to ascertain whether the buds are all blossom buds or mixed with wood buds. If the former predominate it will not be wise to shorten at all if fruit is expected, as the terminal bud may be the only wood bud existing on the upper part of the shoot. When shortening leading shoots prune to a wood bud situated at the back of a shoot, so that growth resulting may be easily trained in the right direction.

Training.—First arrange the main branches equally over the wall surface, the subsidiary branches to be laid in between, the rest of the unoccupied space being filled in by disposing the bearing shoots 4 or 5 inches asunder. After the main parts of strong branches are well secured avoid multiplying the number of shreds and nails more than is necessary in fastening the young shoots. Use clean shreds and fresh nails. Do not place the latter too near the shoots, which need room to swell.

Washing Walls and Trees.—Previous to finally re-arranging the trees, the walls ought to be washed or syringed with hot water at a temperature of 140° to 160°. Fill up old nail holes with mortar and re-point blank spaces between the courses of bricks. As a dressing for the trees dissolve 1 lb. of soft soap in four gallons of hot water. Either syringe with this at a temperature of 120°, or brush the wood and shoots over with it. In applying it to the young wood work the brush upwards from the base. The buds are not then dislocated or injured, and the work is more readily done. Sulphur may be added to the solution at the rate of 4 oz. to each gallon. Some persons add clay and soot, bringing it to the consistency of thin paint, but the only advantage is the mixture marks the progress of the operation. Soft-soap solution alone, well worked into every hole, angle, and crevice of the wood, will reach and destroy all insects lurking therein.

FRUIT FORCING.

Vines.—*Early Forced Houses.*—The Vines in flower must have a temperature of 60° to 65° at night and 70° to 75° by day artificially. Keep the atmosphere somewhat drier by free ventilation, leaving a little air on at night, yet keeping the floors sprinkled three times a day during bright weather. Any shy-setting Grapes may have the pollen distributed by brushing the bunches with a camel's hair brush. Stop the laterals at the first leaf, and keep those pinched to one joint throughout the season, but those beyond the bunch may be allowed to make two or more joints before stopping them, provided there be space for the full exposure of the leaves to light. Avoid overcrowding the foliage; it is better to reduce the laterals than do that.

Houses Started at the New Year.—The Vines are in leaf and showing fruit. Disbud when it is seen which shoots are likely to afford the best bunches. One bunch on a spur is as much as is likely to finish satisfactorily, but, if there be space, two shoots may be left, it being clearly understood that only one is to be allowed to carry fruit, the duplicate only remaining until choice can be made of the best, and in case of two shoots being left one ought to be near the main rod, so as to keep the spur as short as possible. Weakly Vines, however, may be given more latitude, so as to secure stouter wood, larger and plumper eyes, and better bunches in future.

Houses to Afford Grapes in July and August.—The Vines must now be started. Damp the rods three times a day and every available surface. A temperature of 50° at night, 55° by day, and 65° from sun heat is suitable until the buds begin to move. Bring the inside border into a thoroughly moist state by repeated supplies of tepid water or liquid manure. Afford outside borders sufficient protection to prevent chill. Depress young canes to the horizontal line or lower to insure the eyes breaking evenly.

Ripe Grapes.—Avoid fire heat as much as possible in the Grape room, admitting air to prevent an accumulation of moisture, replenishing the bottles with clear soft water as required. An equable temperature of 45° is most suitable.

New Borders.—The soil for new borders should now be prepared, and the best for the purpose is the top 3 inches of a rich pasture of a friable nature, neither light nor very heavy. As that is not always

obtainable light loam may have an addition of clay marl, and heavy loam an addition of calcareous gravel or old mortar and brick rubbish, from a fourth to a sixth in each case. To good friable loam add a tenth of wood ashes, one-fifth of old mortar rubbish, a twentieth of charcoal, and a fortieth part each of crushed bones and calcined oyster shells. These proportions may be added to any soil after its texture has been made heavier or lighter as before stated. If the soil be poor a fifth of short fresh stable manure or horse droppings may be added, otherwise manure or vegetable refuse should not be used, manure in most cases being best applied as a mulch.

In preparing the border, which may be proceeded with as the weather permits, bear in mind that no fruit tree requires more copious supplies of water when in growth than the Vine, and at the same time is more impatient of stagnant water; hence drainage should first receive attention, and instead of excavating, concreting, or cementing, keep the border well elevated as far as circumstances admit. Employ 3-inch drains, with proper fall and outlet. Provide a foot of drainage, the roughest at the bottom and the smallest at the top, which last preferably may be old mortar rubbish. If the border is intended for early or late Vines allow a rather sharp slope to the south for the purpose of throwing off wet by lights or other means. Two feet depth of soil is ample, but it ought to be 2½ feet at first to allow for settling, and the compost should be well compacted.

The best time for planting Vines is from April to June inclusive, and those intended to be planted at that season should now be cut back to the length required, and be placed in a cool Peach house or pit to start into growth. When the new shoots are 2 or 3 inches long shake out the plants and plant them in the permanent borders, spreading the roots out carefully, and working the soil well amongst them. A 6-foot width of border will be sufficient in the first instance. When the roots are to have the run of both inside and outside borders they should be confined inside, not making the outside border until the Vines are thoroughly established.

Melons.—In a Melon house a ridge the whole length of the bed, about 2 feet wide at the base, with the top flattened so as to give a depth of 10 to 12 inches, is preferable to hillocks, the soil being made firm, and when warm the plants may be turned out, compacting the soil well about the balls, and raising it a little higher than before, but not more than within half an inch of the seed leaves. The plants can be placed 2 to 2½ feet asunder, the leading or primary shoots being taken up without stopping until fully two-thirds the distance they are intended to travel is reached, then pinch out the point of each. Some varieties will show fruit on the first laterals, and as early Melons are a consideration let them remain, taking out the point at a joint above them. To allow all the laterals to remain would very much overcrowd the foliage; therefore rub off the alternate laterals whilst they are quite young. After stopping the first laterals the succeeding growths will show fruit at the second or third joint. The growths should be trained thinly and regularly, so that every part is evenly covered with foliage and fruit. The plants will require but little water as yet; nevertheless, maintain the soil in a moist condition, avoiding anything approaching to saturation. Sprinkle every available surface in the morning of bright days, and again at closing time or early in the afternoon. Ventilate carefully, avoiding currents of cold air; some hexagon netting or thin scrim canvas placed over the ventilators will break the force of cutting winds. Keep the night temperature at 70°, falling to 65° in the morning, 5° less in severe weather being better than seeking to maintain the higher temperature by sharp firing; 75° by day, rising to 80° or 85° from sun heat, and 90° to 95° after closing, bottom heat to be kept steady at 80°.

Plants in Pits or Frames.—Plants with the shoots trained on the surface of the soil require somewhat different treatment. The plants being pinched at the second leaf will produce two or more shoots, and these being stopped in turn will result in four; if more reduce to that number, and train two to the front and two to the back of the frame or pit. Shoots springing from the collar should be rubbed off whilst quite young, and do not encourage any laterals nearer the stem than 6 inches. This will keep the collar clear. Stop the principal shoots when within a foot of the sides of the frame or pit, and thus throw the vigour into the laterals, which will show fruit at the second or third joint, stopping them one joint beyond the fruit. Cover the lights with double mats at night, and see that linings are regularly attended to, renewing the old linings as required.

Prepare material for forming fresh beds about a fortnight before it is desired to make up the beds. The manure and leaves should be thoroughly incorporated. In a few days it will be seen whether there is enough moisture to produce decomposition, fermentation being the result; if not, turn the whole, sprinkle with water, so as to moisten the mass, and when in good heat turn again outside to inside and *vice versa*, two or three turnings being required at intervals of about four days. The bottom heat of fermenting beds should be 85° to 90°.

Shift later sown plants into larger pots, or add soil as the plants advance, stopping those for frames at the second, not stopping those for trellises, but placing a small stick to each for support, and rubbing off laterals as they appear.

Cherry Houses.—A lean-to, or preferably a three-quarters span-roof house erected against a south wall, is suitable for Cherries. The trees should be trained to a trellis about 1 foot from the glass; they succeed admirably grown in pots, and the house is set at liberty for other purposes about half the year. Plenty of ventilation should be provided at the top and bottom of the house, and in the case of planted-

out trees the roof lights ought to be moveable. The border should be inside, though the roots may have access to an outside one, thoroughly drained to carry off superfluous water. Good loam, rather strong, is most suitable, adding about a sixth of old mortar rubbish and a similar proportion of road scrapings. Trees from the open wall between four and six years trained if carefully removed to the house come into bearing at once. Water well to settle the soil about the roots, and ventilate freely, syringing in the morning and again in the afternoon, employing fire heat only to exclude frost. When the trees are fairly in growth let the day temperature from fire heat be 50° to 55°, rising to 60° to 65° from sun, increasing the ventilation from 55°, and close at that temperature, leaving, however, a little ventilation on day and night, 40° to 45° at night from artificial heat will be sufficient. Early Rivers, Black Tartarian, Governor Wood, and Elton are suitable varieties for forcing.

PLANT HOUSES.

Caladiums.—If the tubers of these have been resting in a moderately warm place they will have started into growth. The old soil may be shaken from them, and divided where increased stock is needed, and placed in small pots. The compost may consist of good loam, leaf mould, sand, and a little decayed manure. These tubers start well in boxes amongst leaf mould and sand, but when subjected to this treatment they should be potted directly they commence root activity. Whichever method is practised the pots or boxes containing the tubers should be placed in brisk heat. Very little water will be needed until the plants begin to grow and root freely.

Achimenes.—These may also be removed from the old soil and started into growth. They do well in pans or shallow boxes amongst light material. If the soil in which they are laid is in a suitable condition for moisture, and the surface of the pans covered with cocoanut fibre refuse, they will not need water until their growths appear above the soil. When plants in 5 and 6-inch pots are largely used for decoration the tubers may be placed thickly together, but when required for making up in baskets or planting into pans they should be more thinly disposed.

Gloxinias.—Considerable trouble is saved when these are started in boxes amongst leaf mould and sand. After they have commenced to grow they can be lifted out with a good portion attached to their roots and placed at once in the pots in which they are intended to flower. Seed may also be sown; the pots or pans used should be filled with fine light soil and the surface made even, on which scatter the seed. Fine seed of this nature should not be covered, but gently watered with a fine rose can, and then the pots covered with a square of glass. The pots after the seeds are sown should be placed into a temperature of 60° to 65°.

Adiantum cuneatum.—The earliest plants will have started freely into growth, and may be transferred into larger pots. Do not disturb the old ball, beyond the removal of the crocks from the base. Where an increase in the stock is needed, and plenty of seedlings have not been raised, a number of plants that display signs of starting may be cut into two or four portions according to requirements. Use for a compost good loam, two parts, the remaining part being composed of sand and leaf mould. These plants must be watered with care until they are growing and rooting freely. Those that are divided will need very little water for some time if the material on which they stand is kept moist by syringing frequently amongst the pots.

Microlepia hirta cristata.—This is an excellent Fern for decorative purposes, and can be increased very rapidly by division. Plants that are cut up into small pieces and potted into 2-inch pots will be useful by the autumn, and will average 18 inches or more in diameter. If the plants are started in brisk heat they should afterwards be grown in an intermediate temperature, or even in a vinery. If placed in too much heat they soon become a prey to scale.

Selaginellas.—A number of pots should be filled with moderately light soil level to the rim, and small pieces of the old *S. denticulata* dibbled evenly over the surface; the smaller the pieces, the better the plants look after they cover the soil. These pots can be stood in any convenient place until the plants are in active growth. The floor of Cucumber and Melon houses, or amongst Palms, will suit them well. Plants of the old *S. Martensi* may also be broken up and placed into 4 and 5-inch pots. Where grown in low pans they look very effective for dinner-table decoration. The variegated form may be treated in the same way.

Crotons.—Where brisk heat can be maintained all plants that need repotting may be done at once. The soil to be used must be well warmed, and if practicable the plants should be repotted in the house in which they are growing. Plants that have become leggy or bare at the base may, if they display signs of growth, be notched and mossed. If kept in a warm, moist atmosphere they will soon form roots, and can be taken off and established in pots. This is decidedly the best method where large, well furnished plants are needed.

Bracænas.—These plants are very often ruined by confining them too long in small pots. In the early stages of growth, whether stove or greenhouse varieties, a good proportion of leaf mould should be used in the soil. After potting, these plants need careful watering until they are rooting and growing freely. Brisk, moist heat should also be given them; even the greenhouse kinds are benefited by warmth in the early stages of growth. Plants with large heads that have become bare at the base may be re-rooted; they should be well notched and the incisions covered with moss, which keep damp.

THE BEE-KEEPER.

APIARIAN NOTES.

PRESSING HONEY.

ALL my honey, whether from Clover or Heather, is pressed. My method is to hold the frame of honey between the light and the eye, and any pollen visible is excised, a knife being run round the inside of the frame, severing the combs from it; then holding the frame by the ends a sudden jerk throws it on a large dish. The comb is next cut into proper pieces for the cylinder of the presser, and when a number of them are prepared, each piece is lifted with a fork, placed in the cylinder and rammed. When full, the slide is placed beneath the screw. As honey does not flow easily the screw has to be turned gently, but gradually. When the honey is all extracted the screw is slackened, the slide moved sideways, and the cake of wax is pressed out. Meanwhile, the honey has escaped into a tin beneath, and when this is full it is poured into a sieve, the uppermost of a series of different meshes, then into another tin. From this receptacle the honey is passed through a muslin or net bag and from thence into a pail having a sluice or valve, from which it runs into jars. To preserve the flavour of the honey and keep free from dust the jars are immediately covered with parchment.

The whole operation may be performed by one person, and in such a manner that not a single drop of honey comes into contact with the hands or out of place, and the most fastidious persons may rest assured that cleanliness is always maintained. Some people use cheese cloths in conjunction with the presser, but I have never approved of the plan. The hands of the manipulator have to be repeatedly brought into contact with the honey; besides, if pollen be not carefully excised, it is mixed and pressed out with the honey. Some persons, however, argue that the method is a good one, and that no further preparation is necessary. An old bee-keeper of my acquaintance has used a presser of this sort for fifty years, and says there is no better plan, but for the reasons stated above I have long since abandoned cheese-cloths.

A near relative of mine has been experimenting with the "Garstang" presser made on the above principle, but he is not in favour of it; it messes the hands too much, and is no speedier than the Lanarkshire presser. It appears, therefore, that the honey presser, to press at the speed of a ton per day, combined with cleanliness, is still a thing of the future. Bee-keepers, studying their own interest, will do well, whatever change or progress is made, to elect that which preserves the purity of the honey. Let all improvements be on strictly tidy and cleanly lines, and they will find it to their advantage as it has been to me.

BEES AND FRUIT.

For many years past there has been no lack of evidence proving bees to be necessary in many cases for the perfect fertilization of flowers. Some flowers have pollen so glutinous that were it not for bees they would soon die out. It must be kept in view that in the cultivation of fruit and other plants for the use of man there is, or should be, every effort made to get the maximum bulk yearly with the minimum of labour and expense. Bees sometimes do this for us. The pollen is literally wrought into a paste by the incessant wind and rain at time of flowering, and but for the bees in a chance hour of sunshine fertilizing these blossoms many of them would not produce a single fruit. From similar causes I have seen whole fields of Beans nearly barren. Bees are not the only agents which act as fertilizers, but their great numbers ensure crops of fruit sometimes when the weather is unfavourable and other insects scarce.

Evidence has been also given that bees have been observed working on fruit blossoms, yet there was no fruit; but there is a time that flowers do not yield up their pollen, and at these periods, although bees seem busy they may not be getting pollen. Then there must be allowance made for frosts after. Nor is the evidence because there was a heavy crop of fruit on trees bees never wrought upon reliable, because the trees in question were perhaps not constantly watched.

I do not agree with Mr. Bunyard (see page 69) that bees in orchard houses "were utterly useless." My experience is when bees enter a glass structure in search of pollen or honey, and finding the object of their search, they work upon the flowers as if in the field until disturbed or satisfied. Then they make an effort to escape, and in doing so fly against the glass, and are lost. Some gardeners on favourable days give bees all the advantages to enter fruit houses, and they tell me they are rewarded by a good

set of fruit. To ensure success, however, the bees should be admitted at the right time, viz., when the flowers are in a proper condition for the purpose.—A LANARKSHIRE BEE-KEEPER.

TRADE CATALOGUES RECEIVED.

Brewin & Sons, Bawtry, Yorkshire.—*Garden Seeds.*

M. Bruant, Poitiers, France.—*Plant Novelties.*

James Cocker & Sons, Aberdeen.—*Vegetable and Flower Seeds and Florists' Plants.*

R. C. Notcutt, Broughton Road Nursery, Ipswich.—*Chrysanthemums and other Plants.*



*All correspondence should be directed either to "THE EDITOR" or to "THE PUBLISHER." Letters addressed to Dr. Hogg or members of the staff often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post, and we do not undertake to return rejected communications.

Address (J. C.).—Please send your own name and address, and we will try and send the required information.

Book (Constant Reader).—We have made inquiries, and cannot find that there is a work devoted to the Auricula by the gentleman you name, or any other grower of these plants.

Chrysanthemum Lists (W. B.).—You send no matter whatever pertaining to the lists. It is necessary that you should explain the object in view in their preparation. You will find several lists of Japanese varieties in another column.

Lunaria biennis (F. R.).—Raising plants of this biennial, Honesty, is effected by sowing seeds thinly in drills in the open ground early in June. If the seedlings are transplanted when an inch or two high, not less than a foot asunder, they make strong plants by the autumn for flowering early the following year. A few plants of the white flowered variety have a pretty effect among the others.

Poinsettia pulcherrima (An Old Reader).—The specimens you send are of the late variety that has been recommended by Mr. G. Parrant. The colour is richer than in the early variety, and the midribs more prominent. We have had specimens of both from Mr. Parrant, admirably grown undoubtedly, some of the bracts of the late variety being nearly 2 inches in diameter, and of remarkable substance. Those you sent were very good indeed, as produced by such dwarf and presumably late struck plants. We trust you will be a reader of your favourite paper for many years to come.

Margaret Carnations (Market Youngster).—The market gardener to whom you refer says these Carnations, which we prefer to call Pinks, did not answer well when grown in the open ground, and lifted and potted. They grew to such a size that it was not possible to lift them without giving a severe check. They are now flowering fairly well, but it was during November and December that they were most wanted. By the first week in February you ought to have the houses ready for planting, or better still, planted with Tomatoes, and if other plants hinder this important work, the best prices for the former—viz., those obtained during April and May, will be missed. That might mean a greater loss than would result if the houses had been kept empty and the fuel saved during the winter. Margaret Pinks are the most serviceable in winter when grown in 6-inch or slightly larger pots. The plants may be grown quite in the open during the summer, and will commence flowering directly they are housed in September or early in October. There will be a small percentage of single flowering varieties, and which will be of no marketable value. Each well-grown plant should produce eighteen, sometimes a few more, fairly large well-formed blooms, but the colours being mixed, 9d. per dozen is about all that will be obtained for them wholesale. You might probably have room in one of the 14-foot wide houses for eight rows of plants, or say 500 in all, which may perhaps realise £25. March is soon enough to sow the seed in pans or boxes, and germination is more free in gentle heat than in a very high temperature. If some road grit, horse droppings, and leaf soil is mixed with the garden soil, that will most probably suit the plants. A temperature

ranging from 50° to 55° will be quite high enough for the plants when in flower. Why not devote one or more houses to Mushroom growing during the winter? Mushrooms, if properly managed, often pay even better than Tomatoes, and succeed well under a roof covering of the latter. The Magnum Bonum Tomato is one of Sutton & Sons' novelties, described as an early, heavy cropping, red-fruited variety.

Fertilisers for Azaleas and Camellias (*A Constant Reader*).—Mr. Dunkin, to whom you appeal, says you may rest assured that any of the artificial fertilisers sent out by respectable firms, and freely advertised in the Journal, may with advantage be applied to these plants, provided the directions given on each tin or packet are strictly followed. There is a great tendency, especially on the part of young men, to give an overdose, and any unfavourable results, which as a natural consequence follow, are attributed to the unsuitableness of the manure. Clay's fertiliser and Standen's manure have been long applied by Mr. Dunkin with the best results to the plants in question and greenhouse Rhododendrons. If given about half-a-dozen times in the year, and a surface dressing of bonemeal is applied twice in the same length of time, the plants are kept in splendid health, the growth made being short-jointed, and the leaves of a deep green hue. By making good use of these manures large plants can be kept strong and healthy in much smaller pots than are often employed. Mr. Dunkin has a Camellia about 8 feet in height and 5 feet in diameter, quite a thick solid looking bush, growing in less than a bushel of compost. It has not been reported for many years, and will not be disturbed so long as it remains in its present condition, but supported by fertilisers. In addition to those mentioned, clarified soot water is occasionally given. Azaleas would be vastly improved if artificial manures were given regularly, and the shoals of thrips which infest so many plants beat a speedy retreat when the starvation practice gives place to a more rational one.

Planting Border with Bedding Plants (*T. G.*).—There are many methods of planting by which the glaring monotony of "ribbon borders" may be avoided. One very simple way of doing this is to make a series of half-circles the entire length of the border, so that the arcs of the circles join as they cut the edging in front of the border. These half-circles could then be marked out in double lines of Iresine, Pyrethrum, or yellow Calceolaria; and the panels joined at front and back, planted in pairs. When well carried out this is an effective arrangement. Still better, however, is perhaps the following:—Mark out a number of oval or elliptical spaces alternately along the centre of the border. Plant a raised edging of *Cerastium tomentosum* 6 inches in width. If the back of the border is bounded by a wall or fence plant then a row of the tallest plants (dot plants excepted) which you intend to employ in the arrangement. Dot this line, opposite the centre of each oval, with a strong plant of *Humea elegans*. In the centre of the circles a single plant of *Chamœpeuce diacantha* and *Eulalia japonica* may be planted alternately, or other suitable dot plants will do equally well. Fill in the groundwork of the border with *Sedum glaucum* or *S. acre aureum*. The whole of the circles and ovals may be filled with such plants as *Pelargoniums*, *Begonias*, and *Lobelias*. Each little group should only contain one colour, but either the circles or ovals, or both, ought to be planted in pairs. The quickest way of marking the ovals on the ground would be to first cut boards into the right size and shape, fasten them together, then lay this framework upon the ground and mark around it.

Names of Fruits.—*Notice.*—We have pleasure in naming good typical fruits (when the names are discoverable) for the convenience of regular subscribers, who are the growers of such fruit, and not collectors of specimens from non-subscribers. This latter procedure is wholly irregular, and we trust that none of our readers will allow themselves to be made the mediums in infringing our rules. Special attention is directed to the following decision, the object of which is to discourage the growth of inferior and promote the culture of superior varieties. *In consequence of the large number of worthless Apples and Pears sent to this office to be named, it has been decided to name only specimens and varieties of approved merit, and to reject the inferior, which are not worth sending or growing.* The names and addresses of senders of fruit to be named must in all cases be enclosed with the specimens, whether letters referring to the fruit are sent by post or not. The names are not necessarily required for publication, initials sufficing for that. Only six specimens can be named at once, and any beyond that number cannot be preserved. *They should be sent on the first indication of change towards ripening. Dessert Pears cannot be named in a hard green state.* (*H.*).—Apparently *Mère de Ménage*, but in bad condition. (*M. R., Berks.*).—Apple, Rymer; Pear, Martin Sire. (*B. S.*).—1, *Beurré Rance*; 2, *Swan's Egg*; 3, *Nec Plus Meuris*. (*Derby*).—1, *Northern Greening*; 2, *Dumelow's Seedling*; 3, *Lane's Prince Albert*; 4, *Court Pendu Plat*; 5, *Wyken Pippen*; 6, *Sam Young*.

Names of Plants.—We only undertake to name species of plants, not varieties that have originated from seed and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in firm boxes. Slightly damp moss, soft green grass or leaves form the best packing, dry wool the worst. Not more than six specimens can be named at once, and the numbers should be visible without untying the ligatures, it being often difficult to separate them when the paper is damp. (*L. H. F.*).—*Acacia armata*. (*D. C.*).—1, *Davallia concinna*; 2, *Adiantum cuneatum*; 3, *Pteris tremula variegata*. (*Lincoln*).—1, *Dieffenbachia velutina*; 2, *Dracæna indivisa*. (*F. C.*).—1, *Libonia floribunda*; 2, *Eranthemum pulchellum*. (*J. C.*).—1, Probably a *Diosma*,

send when in flower; 2, *Chimonanthus fragrans*. (*W. A.*).—1, *Woodwardia radicans*; 2, *Pteris serrulata*; 3, *Asplenium bulbiferum*; 4, *Scolopendrium vulgare cristatum*; 5, imperfect; 6, *Polystichum aculeatum*; 7, *Davallia canariensis*; 8, *Pteris serrulata cristata*; 10, *Selaginella Wildenovi*.

COVENT GARDEN MARKET.—FEBRUARY 7TH.

MARKET quiet. A few Cape Peaches just arrived in good condition, but of inferior quality.

FRUIT.

		s.	d.	s.	d.			s.	d.	s.	d.				
Apples, per bushel	2	6	to	9	0	Peaches, per doz.	..	..	0	0	to	0	0
Cobs	40	0		42	6	Plums, per half sieve	..	..	0	0		0	0
Grapes per lb.	0	6		2	0	St. Michael Pines, each	..	..	2	0		6	0
Lemons, case	10	0		15	0								

VEGETABLES.

	s.	d.	s.	d.		s.	d.	s.	d.		
Beans, Kidney, per lb.	1	0	to	1	6	Mustard and Cress, punnet	0	2	to	0	0
Beet, Red, dozen	1	0	0	0	Onions, bushel	3	6	4	0		
Carrots, bunch	0	3	0	4	Parsley, dozen bunches	2	0	3	0		
Cauliflowers, dozen	2	0	3	0	Parsnips, dozen	1	0	0	0		
Celery, bundle	1	0	1	3	Potatoes, per cwt.	2	0	4	6		
Colworts, dozen bunches	2	0	4	0	Salsafy, bundle	1	0	1	5		
Cucumbers, dozen	2	0	5	0	Scorzonera, bundle	1	6	0	0		
Endive, dozen	1	3	1	6	Seakale, per basket	1	3	1	6		
Herbs, bunch	0	3	0	0	Shallots, per lb.	0	3	0	0		
Leeks, bunch	0	2	0	0	Spinach, bushel	8	0	0	0		
Lettuce, dozen	0	9	1	0	Tomatoes, per lb.	0	3	0	7		
Mushrooms, punnet	0	9	1	0	Turnips, bunch	0	3	0	0		

AVERAGE WHOLESALE PRICES.—CUT FLOWERS.

Orchid Blooms in variety.

	s.	d.	s.	d.		s.	d.	s.	d.	
Arum Lilies, 12 blooms ..	2	0	to	4	0	Pelargoniums, 12 bunches	6	0	to 12	0
Azalea, dozen sprays.. ..	0	6	1	0		Pelargoniums, scarlet, doz.				
Bouvardias, bunch	0	6	1	0		bunches	4	0	9	0
Camellias, dozen blooms ..	0	9	2	0		Poinsettia, doz. blooms ..	3	0	4	0
Carnations, 12 blooms ..	2	0	4	0		Primula (double), dozen				
Chrysanthemums, dozen						sprays	0	6	1	0
bunches	2	0	6	0		Pyrethrum, dozen bunches	2	0	4	0
Eucharis, dozen	3	0	4	0		Roses (indoor), dozen ..	1	0	2	0
Gardeuias, per dozen ..	6	0	12	0		„ Tea, white, dozen ..	1	0	3	0
Hyaciuths, dozen spikes ..	3	0	5	0		„ Yellow, dozen	2	0	4	0
Hyaciuth, Romau, dozen						Roses, Safrano (French),				
sprays	0	6	0	9		per dozen	1	6	3	0
Lilac (French) per bunch	3	6	6	0		Roses, Safrano (French),				
Lilies of the Valley, dozen						per 100	6	0	10	0
sprays	0	6	1	0		Roses, Safrano (English),				
Lilium longiflorum, per						per dozen	2	0	3	0
dozen	6	0	12	0		Roses, Maréchal Neil, per				
Maidenhair Fern, dozen						dozen	3	0	6	0
bunches	4	0	6	0		Tuberoses, 12 blooms.. ..	0	6	1	0
Marguerites, 12 bunches ..	2	0	4	0		Tulips, dozen blooms ..	0	6	1	6
Mignonette, 12 bunches ..	3	0	6	0		Violets, Parme (French),				
Narciss, Yellow (French),						per bunch.. .. .	3	0	5	0
dozen bunches.. .. .	1	6	2	6		Violets, Czar (French), per				
Narciss, White (French),						bunch	2	6	3	0
dozen bunches.. .. .	2	0	4	0		Violets (English), dozen				
Orchids, per dozen blcoms	3	0	12	0		bunches	1	6	2	0

PLANTS IN POTS.

	s.	d.	s.	d.		s.	d.	s.	d.		
Arbor Vitæ (golden) dozen	6	0	to	12	0	Foliage plants, var., each ..	2	0	to	10	0
Aspidistra, per dozen ..	18	0	36	0	Genista, per dozen	12	0	18	0		
Aspidistra, specimen plant	5	0	10	6	Hyacinths, per dozen ..	6	0	9	0		
Azaleas, per dozen	24	0	42	0	Lilium Harrissi, per dozen	12	0	24	0		
Cineraria, per dozen	6	0	12	0	Lycopodiums, per dozen ..	3	0	4	0		
Cyclamen, per dozen	9	0	18	0	Marguerite Daisy, dozen ..	6	0	12	0		
Dracæna terminalis, per					Mignonette, per doz... ..	6	0	9	0		
dozen	18	0	42	0	Myrtles, dozen	6	0	9	0		
Dracæna viridis, dozen ..	9	0	24	0	Palms, in var., each	1	0	15	0		
Ericas, per dozen	9	0	24	0	„ (specimens)	21	0	£3	0		
Euonymus, var., dozen ..	6	0	18	0	Poinsettia, per dozen ..	12	0	15	0		
Evergreen, in var., dozen	6	0	24	0	Solanums, per dozen	9	0	12	0		
Ferns, in variety, dozen ..	4	0	18	0	Sineraira per doz.	6	0	12	0		
Ferns (small) per hundred	4	0	6	0	Tulips, per dozen	6	0	9	0		
Ficus elastica, each	1	0	7	6							



POOR PASTURE.

To all permanent pasture, old or new, that is now brown and bare the term of poor pasture is applicable; with very few exceptions it also applies to all pasture not brought under thorough systematic cultivation, and so maintained. The exceptions are marsh, fen, and vale pasture in alluvial soil, rich in pristine fertility. Such pasture and no other may be left out of our calculations. The remainder—i.e., the greater part—suffers more or less, generally more, from soil exhaustion. Nothing approaching a high standard of fertility has it ever had; manure, so-called, has been applied in a perfunctory manner, in insufficient quantities, and at such long intervals, that

soil exhaustion may safely be said to be always in evidence. Plainly be it said to every farmer that pasture requires an annual dressing of manure in sufficient quantity to replenish with fertility every particle of the soil in which it grows, such annual dressing to be in addition to droppings from stock turned out to grass.

Agreeing as we almost invariably do to cancelling arbitrary restrictive covenants in farm leases or agreements, we would not only insist upon sustained fertility of soil, but would have an annual inspection made by the estate agent or other competent person. The test might be applied when most convenient, but the most certain test would be that of colour in winter. Brown, dead looking pasture in winter is poor pasture; green, fresh looking pasture in winter is rich pasture. As we write we have in mind two meadows which now, at the end of January, present a striking contrast. One is fresh and green as an emerald; it is full of growth, for the cows were withdrawn from it early in the autumn, and there will be a full bite for them early in spring. The other is brown and bare, cows or store beasts have been out on it all the winter, having a miserable pittance of Oat straw once a day. Stock and pasture are alike starved. Both are caricatures which we would gladly improve off the face of the earth.

While it is certain that the long drought of 1893 told upon all pasture, the herbage of rich pasture only failed for a short time at midsummer. The annual February manure dressing told so well that growth strong and early followed; there was a fair, in many cases a full crop of hay. Had this been as general as it ought the amount of imported hay would not have grown to 200,000 tons, as it is now said to have done, nor would stock have fallen so low in price. In so mild a winter it will, in view of an early spring, be advisable to apply the annual dressing of chemical manure earlier than usual—say in the third week of February if the weather continues open. Where sheep folding on hill farms has been in full action during the winter nothing more will be required, but for all other pasture without exception should have from 2 to 3 cwt. per acre of pure chemical manure. To those farmers who have dressed some of their pasture with farmyard manure we say, Give the remainder a dressing of chemical manure and watch closely the result, compare carefully the cost, and apply the lesson to future practice.

It can do nothing but good to tell once more of an example of this in our own practice. A large piece of permanent pasture, held in reserve for hay, was divided by a road into two equal parts, alike in every important respect, and it was resolved to try the effect of muck on one half and chemical manure on the other. The farmyard manure, at the rate of thirty cartloads per acre, was applied in the autumn, towards the end of October; its effect was soon visible, the herbage assuming a lively green hue, and making growth while the weather was mild and open, so that it presented a striking contrast to the brown stunted appearance of the other half. In the following February this part was dressed with chemical manure, consisting of $\frac{1}{2}$ cwt. nitrate of potash, $\frac{3}{4}$ cwt. nitrate of soda, $\frac{1}{2}$ cwt. mineral superphosphate, and $\frac{1}{2}$ cwt. steamed bone flour, procured separately from a reliable source and mixed at the farm. The effect of this dressing was remarkable; the herbage, starting into growth quickly, soon took the lead of the other, eventually yielding a crop of hay twice the bulk of that obtained from the farmyard manure.

Subsequently the use of farmyard manure was discontinued altogether on the hay pastures, and the effect of a regular annual dressing of the chemical manures was a steady improvement in the whole of the pasture, which, so far as the hay crop was concerned, was very little if at all affected by drought, for the application of the manure by the end of February or early in March ensured an early strong growth and a full crop of hay. Experience has shown the importance of this early dressing, for if it is not used till April a month's growth may be lost,

apart from the risk of drought and subsequent waste of manure. We may add that when, in 1885, the home farm upon which such good work was done passed out of our hands, the showery spring of that year brought the crown and finish to our work in a crop of hay of fully double the bulk of any previous year.

Ultimately we were induced to modify our chemical manure formula for pasture, mainly because that splendid fertilizer nitrate of potash is so expensive, and muriate of potash is so cheap and so efficient. Our annual dressing per acre is now 1 cwt. nitrate of soda, 1 cwt. superphosphate, $\frac{1}{2}$ cwt. muriate of potash, $\frac{1}{2}$ cwt. steamed bone flour, and 2 cwt. common salt. Procure enough of these splendid fertilizers separately, have them mixed carefully a few days before using, and apply this year in the third week of February, and in no year later than the fourth week. Last year it was the rain in the last week of February and the first few days of March that dissolved and washed-in the manure, so that the pasture derived full benefit from it in the drought which set in so soon afterwards.

WORK ON THE HOME FARM.

Get in the spring corn whenever the land is in a condition suitable for the work. Long and persistently have we advised the extension of the Oat crop; glad indeed are we to find that at length it has come to be regarded as the leading cereal crop of this country. We may also remind our readers of the importance of the selection of good seed, thick, short, full, and heavy. Such seed corn drilled with the manure in soil autumn-cleaned and well tilled will yield a crop far above the average. Let your standard of excellence for this crop be ten quarters an acre, there is no reason why it should not be twelve quarters in good mixed soil. With Oats at the present price of 24s. a quarter, and the straw at from 60s. to 80s. per ton, we have a crop worth £20 an acre. It is unlikely that the straw will maintain its present high price, but the great scarcity of hay has forced the Oat straw into such prominence as was never before given to it, and it is likely to continue in general use.

Black Tartarian is our favourite sort for spring sowing, but we are bound to say that we have always found a really fine heavy sample of White Canadian go well on market. Sow from three to five bushels an acre, according to soil, the better the soil and situation the lesser the quantity. Drill in with the corn in good sound land 1 cwt. nitrate of soda and 2 cwt. superphosphate, in poor land use 2 cwt. nitrate of soda.

If spring Beans are grown sow as soon as possible; sow also Peas now, and remember how useful Pea straw is for the flock. Both Peas and Beans are a valuable addition to the mixed dietary of sheep and cattle; we restrict their growth to the home requirements, giving preference to Oats and Barley for any superfluous quantities for sale. Barley usually follows Oats, but it has long been our custom to sow Oats in any land coming late to hand, and we have found that Oats may be sown to yield a useful crop any time from early in February till the first or second week of May. The latter date is full late we admit, but we have had some very useful May-sown Oats—a sort of emergency crop, not exactly up to our ten-quarter standard.

METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude, 111 feet

DATE.	9 A.M.					IN THE DAY.				Rain.
1894. January and February.	Barometer at 32° and Sea Level.	Hygrometer.		Direc- tion of Wind.	Temp. of soil at 1 foot.	Shade Tem- perature.		Radiation Temperature		
		Dry.	Wet.			Max.	Min.	In Sun.	On Grass.	
	Inchs.	deg.	deg.		deg.	deg.	deg.	deg.	deg.	Inchs.
Sunday .. 28	29.702	37.6	34.9	S.W.	41.2	43.4	35.4	71.2	30.2	0.010
Monday .. 29	30.082	37.8	36.0	W.	40.0	46.0	33.3	71.4	26.2	0.110
Tuesday .. 30	29.759	42.2	39.7	W.	39.9	48.8	3.9	75.9	30.9	0.152
Wednesday 31	29.297	42.3	41.8	N.	40.0	42.7	40.0	48.4	33.1	0.127
Thursday Feb. 1	29.904	33.7	32.4	W.	39.9	50.2	31.0	62.8	26.4	0.078
Friday .. 2	30.051	49.9	48.9	W.	39.9	52.9	34.1	58.2	29.3	0.121
Saturday .. 3	30.011	48.6	46.9	W.	41.9	51.8	47.1	82.8	44.0	—
	29.829	41.7	40.1		40.4	48.0	36.8	67.2	31.4	0.598

REMARKS.

- 28th.—Brilliant sunshine all morning; showers of wet snow at 1.45 P.M.; sunshine again about 3.30 P.M., and brilliant evening.
 29th.—Some sunshine early, cloudy from 10 A.M. to noon, and generally sunny in afternoon; rain from 11.45 P.M.
 30th.—Rain till 2.30 A.M.; bright sun from sunrise to sunset, with brief intervals of cloud.
 31st.—Rain from 1.30 A.M. to 6 A.M., and 8.30 A.M. to 11 A.M.; gleams of sun about 3 P.M., but overcast again with slight showers later.
 1st.—Shower at 1 A.M.; almost cloudless from about 6 A.M. to 11 A.M. and bright sun to 0.3 P.M.; rain from 4 P.M. to 7 P.M., and overcast after.
 2nd.—Overcast and mild throughout.
 3rd.—Rain from 6 A.M. to 7.30 A.M., and overcast till 10 A.M., bright sunshine from 10.30 A.M. to sunset, and clear evening.
 A mild and, notwithstanding some sunshine, a rather wet week.—G. J. SYMONS



EXQUISITELY pure and beautiful as is the Snowdrop it would have a worthy rival in the Snowflake could rivalry be imagined between such beautiful flowers. It appears strange that while so many flowers of less beauty have attracted the notice of many of our greater poets, the *Leucojum* seems to have met with unmerited neglect at their hands. So far as the writer is aware, James Hogg, the Ettrick Shepherd, is the only one who has introduced this beautiful blossom into his verse.

If, however, the poets have neglected the fair Snowflake, some of our old flower lovers recognised its beauty and worth in the garden. Parkinson in his "Paradisus" speaks of five sorts, one of which is probably a Snowdrop, and in other old works frequent mention under various names is made of one or more of the varieties. Since this is so the absence of the Snowflakes from so many gardens in the present day speaks volumes in testimony of the decadence of the taste for hardy bulbous flowers—a decadence which it is cheering to see has not only been checked, but turned into a growing appreciation of the value of such flowers as the subjects of this article.

In searching for information regarding the *Leucojums* it is a little puzzling to find them figuring under such diverse names. The original spelling of the name one would think must have been *Leucoion*, on account of its derivation from the two words *leukos*, white, and *ion*, a Violet, in allusion to the colour of the flowers. This appears to have been corrupted into *Leucojum*, and by a further change it became with many *Leucojum*. The popular name was in olden times the "Bulbous Violet," which it is supposed was altered by Curtis to Snowflake. Philip Miller, in his "Gardeners' Dictionary," classes it with the Snowdrop, under the name of *Narcisso-Leucojum*, while he applies *Leucojum* itself to the Stocks and Wallflowers. Some interesting but unprofitable searches in the works of our old writers would permit of further remarks on this branch of the subject, but enough has probably been said already.

The latest arrangement of the genus is that of Mr. J. G. Baker in his "Handbook of the Amaryllideæ," and in these notes I have followed the classification of that work, which is of the greatest value to persons interested in the *Narcissi*, *Galanthus*, and other allied plants. In the sub-genus *Euleucojum* Mr. Baker places the fairly well known Summer Snowflakes, *L. æstivum* of Linnaeus and *L. pulchellum* of Salisbury. These are not unfrequently seen in gardens, but few who grow them observe that the plants are distinct. The first is, I think, the finer species, although the beautiful shining appearance of the flowers of the latter give it a claim to the specific name of *pulchellum*. Both are, however, worth growing, and should not be omitted from the garden, the flowers of *L. pulchellum* being about a fortnight earlier than those of *L. æstivum*. It is also distinguished by its narrower leaves and smaller flowers and capsules. It is true that these plants have a fault, and that is in their growth being tall compared with the size of the blooms, but this failing can well be condoned for the purity of the flowers themselves, which are snow white save for the beautiful green tips of the outside of the perianth segments, the blooms of *L. pulchellum* having a most beautiful satin-like lustre. These flowers are produced several on a long stout stem, and the bright green glossy leaves are a great feature of the beauty of the plant.

The normal period of flowering of these summer species is from the middle of April to the end of May. While *L. æstivum* is found over a wide extent of country, occurring in Britain, and from France to the Crimea, Armenia, and Bithynia, *L. pulchellum* appears to have a more restricted habitat, as Mr. Baker gives Sardinia and the Balearic Isles as its habitats. The "Handbook of the Amaryllideæ" gives as a synonym of *L. pulchellum*, *L. Hernandezi*; and although nurserymen frequently catalogue the latter as distinct from *pulchellum* I have not yet seen any plant which would warrant one in differing from that authority.

The sub-genus *Erinosma* contains only one species, *L. verum* of Linnaeus, and the "Botanical Magazine;" Herbert's name being *Erinosma verum*. Of this and its varieties it is safe to say that they are worthy of a good place in the choicest collection of hardy flowers, coming into flower as they do when in most seasons all the Snowdrops are over and many of the Crocuses are in their fullest glory. The typical species, which usually blooms early in March, has very beautiful pure white flowers with the conspicuous green tip on the outside which is so ornamental a feature of most of the Snowflakes. The leaves are bright green, and the height of this Snowflake is from 6 to 12 inches. Mr. Baker, in his "Handbook," names two varieties in addition to the type. These are *L. carpathicum* and *L. verum* var. *Vagneri*. *L. carpathicum* of Mr. Baker "is a form with the perianth segments tipped with yellow instead of green." This is a most beautiful little Snowflake, which I have had in my garden for some years. It is not at all common, but is a good grower and increases rapidly after having become established. *L. verum* var. *Vagneri* Mr. Baker describes as a "tall robust form with two flowers." I believe this is the plant at one time sold by Messrs. Barr & Son as *L. carpathicum* and which I had from them some years ago. The spots are green, but the plant is a taller grower than the ordinary *L. verum*; blooms earlier and has generally fasciated flower-stems.

There is also said to be another form with yellow spots, but this I have never been able to meet with, and it is not recognised in the "Handbook of the Amaryllideæ." The double form of *L. verum* (also unnoticed in the work referred to) is very rare, and apparently a bad doer. It was at one time in the garden at Floore, and may still be there, and is also in the garden of Mr. James Allen of Shepton Mallet. It is not a good grower, and the flowers frequently fail to open. It is also, I understand, of less decorative value than the single forms. I have never seen this in any catalogue, but I believe it is in at least one nursery on the Continent.

In the sub-genus *Acis* five species are described, and all of these are still rare in gardens. *L. trichophyllum* and its variety *grandiflorum*, both of which flower in spring, are beautiful little Snowflakes, resembling *L. autumnale*. They are unfortunately rather tender, and only to be recommended for favoured situations and well-drained soils. The flowers are pure white, and only from half to three-quarters of an inch long in the type, and three-quarters to an inch in the variety *grandiflorum*. The leaves are very slender. These *Leucojums* are natives of Spain, Portugal, Morocco, and Algiers. With *L. tingitanum* from Morocco, near Tangier, which also flowers in spring, and *L. longifolium* from Corsica, flowering in April and May, I have no acquaintance.

Of *L. autumnale*, however, which is of similar character, but flowers in autumn, one cannot speak too highly. It has been in my garden for a few years, and when in flower is admired by everyone who sees it. It is one of the fairy-like little plants which commend themselves to those who admire grace and delicacy in flowers. The flowers are white, slightly tinged with red, and droop gracefully on their slender stems, which are from 3 to 9 inches in length—in my garden about 6 inches. The leaves are grass-like, and generally appear immediately after the flowers. Of *L. roseum*, which flowers in September and October, I have had so little

experience that I can hardly speak of its hardiness with us in the south-west of Scotland. It is a beautiful little plant with rosy or rose red flowers on stems only 2 to 5 inches long, and with narrow leaves. It comes from the mountains of Corsica, and should stand our winters.

In the sub-genus *Ruminia* is placed *L. hyemale*, which I have had for two years, but have not yet flowered. It has during that time been exposed to some severe weather, and up till now appears to be quite hardy. Not having seen this in flower I am not in a position to speak with confidence of its merits. Mr. Baker describes the leaves as, "2—4, narrow linear, contemporary with the flowers, finally a foot long," and the flowers as usually solitary with the perianth-limb one-third to half inch long. The habitat of this species is the "coast rocks at Nice, Mentone, and Villafranca." The flowers do not appear until about April.

With reference to the cultivation of the Snowflakes no difficulty need be apprehended in growing *L. æstivum*, *L. pulchellum*, and *L. vernum*, and its varieties. They are, however, much more impatient of disturbance than the Snowdrops and slower of increase, and frequently fail to flower for a year or two after removal. *L. trichophyllum* with its variety *grandiflorum* should have very light sandy soil, as also ought *L. autumnale*, *L. roseum*, and *L. hyemale*.

Very much interesting matter regarding the *Leucoiums* has been left untouched, but a word or two upon the future of these beautiful and chaste flowers may be of some service. There is little doubt that systematic selection of seedlings, and equally systematic hybridisation, would yield most valuable results, and bring the Snowflakes into a position they have never as yet attained. We can hardly expect to obtain the results achieved with the Daffodils, but there is, I think, a possibility of surpassing the progress made with the Snowdrops. Profitable in a pecuniary sense the work would hardly be to the raisers, but our gardens would be greatly enriched and a valuable addition made to the wealth of beauty in our British flower gardens. I have made a beginning of raising seedling Snowflakes, but it will be some years before their flowers will appear, and I cannot expect in growing so many plants of various kinds as I do to gain anything like what would fall to the fortune of one confining himself to a few flowers, and making the proverbial "hobby" of them. No one will ever regret embarking on the cultivation of the Snowflakes, and those who can add new forms or improved varieties to our present ones will deserve the gratitude of lovers of flowers.—S. ARNOTT.

THE BEST PEARS.

CONSIDERING the large number of varieties of Pears at present in cultivation, it is a remarkable fact that there are comparatively few kinds really worth growing. A Pear to prove worthy of garden culture should have the flesh fine grained and melting, with a rich and luscious flavour. As types I will select Doyenné du Comice, Marie Louise, and Winter Nelis. Pears which are either coarse grained with an insipid aroma are not worth the room they occupy.

It is rather difficult to understand why there are so many of this latter class of fruit grown; possibly because the trees are both good growers and free bearers, the fruits also being attractive looking. These are qualifications some persons may consider as to be of sufficient passport for their being entered into cultivation, but it must be considered that the Pear should take a high position as a dessert, and surely a fruit to attain this must be of such a nature that it will be partaken of freely. It has been a surprise to me that these indifferent varieties are often recommended for growing on soils which are described as of not the best for the culture of the Pear. According to my experience and observations, a Pear which will not come of good quality on the best of soils, and under the most favourable conditions of both culture and climate in Britain, will certainly not do so under less favourable circumstances. The benefit of only cultivating the best varieties is therefore clearly obvious.

Climate, I am aware, often makes all the difference as to the position the trees should be grown in, for, whilst in favourable districts several of the best varieties may be cultivated in the open with a fair measure of success, in others they require the best protection that warm walls can bestow on them. The planting must therefore not be carried out in a haphazard manner. Again, the early, and the majority of the September and October Pears, are of much better quality if they are cultivated in the open. Even if walls were at disposal I would not plant these varieties against them, but rather devote the space to those which require such protection, and as the later varieties have mainly the characteristic of not going off quickly, the fruits could be disposed of if there are more than required for use. This article is not written with any pretence to commercial enterprise, but rather in securing a succession of fruit for a private table.

In cultivating Pears with this end in view the list of varieties must not be too limited, not that I recommend large collections, but selections. To keep up a succession I should not care to limit myself to less than eighteen varieties, or even two dozen, and this number forms the major part of the best Pears in cultivation. Even amongst these would be found Pears to suit all palates, and it is astonishing the marked difference there is between people as to their likes and dislikes of particular fruits. Some have a partiality for musky flavoured Pears, such as Williams' Bon Chrétien, and Thompson's, whilst others are more partial to the vinous flavoured. Of this section, Marie Louise, Doyenné du Comice, Winter Nelis, and Beurré Superfin are examples; but of their peculiarities I will speak hereafter.

As previously hinted some of the best September and October Pears are of better quality when cultivated in the open, and in more favourable districts those which come to perfection throughout November may also be so grown with advantage. I know it is sometimes recommended that the earlier Pears should be grown against walls which have a cool aspect, but this is not conducive to high quality. Far better is it to cultivate them in the open where they are exposed to the full influence of sun, the quality being all the better accordingly. These varieties will include Clapp's Favourite, Williams' Bon Chrétien, Triomphe de Vienne, Beurré d'Amanlis, Louise Bonne of Jersey, and Comte de Lamy. In the more favourable district, and on warm soils, this list could be extended to Fondante d'Automne, Beurré Superfin, Beurré Hardy, Emile d'Heyst, Marie Louise, Thompson's, Doyenné du Comice, and Pitmaston Duchesse. In less favourable localities these latter, taking one season with another, would be better if cultivated against a wall with a west or south-west aspect.

With reference to the winter and later varieties, the best results are obtained by growing them against walls with full south aspect. In the more favoured Pear districts excellent results are obtained if the trees are given the benefit of a western aspect; but, as a general rule, their highest merits are best obtained from a south wall. These include Marie Benoist, Beurré d'Aremberg, Nouvelle Fulvie, Josephine de Malines, Glou Morceau, Winter Nelis, Bergamotte Esperen, Passe Crassane, and Olivier des Serres. The above selection may not include all the best varieties, as I could extend it, but, as before remarked, it certainly contains the major part.—A. YOUNG.

OLD-FASHIONED FLOWERS.

EVER and anon Fashion, that Goddess to whom few are bold enough to refuse tribute, invades the peaceful art of gardening, and selects some particular class of plants that are, for the time being, to bask in the smiles of her favour. The Tulip mania of earlier days was a prominent example in which these innocent plants were made the object of speculation and gambling to such an extent that some particular roots, sold and re-sold for fabulous sums, were kept unplanted, and did not even afford the gratification that one bulb, valued at several thousand florins, did to a British sailor in Amsterdam, who picked up the Onion as he thought off a merchant's counter, and ate it as a relish to his bread and cheese. Coming down to our own times, Orchids, Flora's aristocracy, have had a large share of attention, and will probably escape the severe reaction which a period of excitement entails, and which too often places the object on a pedestal to relegate it, on the turn of the tide, into obscurity.

Fashion has now set her seal on hardy flowers, and if she must intrude in our domain, no wiser choice could she have made, for these are the flowers for all sorts and conditions of men, from prince to peasant. Many of these are new friends to our borders, which we heartily welcome, others are old friends so improved that we hardly recognise them, and many of the original types

not now wearing the wedding garment of fashion are scarcely permissible among their more finely dressed relations. I think while we are so enamoured of the new love there is some danger of the old love getting slighted, although by a little self-deception we may call them old-fashioned, because, forsooth, it is the new fashion to do so. But how few of these are those links with the past—those which speak to us in their eloquent language of auld lang syne. We may not be endowed with the ultra poetic temperament of sunnier climes, where

“In Eastern lands they talk in flowers,
And they tell in a garland their loves and cares,
Each blossom that blooms in their garden bowers
On its leaves a mystic language bears.”

But the little poetry that does come into our lives, to soften and fine down the rougher elements, we can ill afford to lose. For posterity we are indeed sowing a goodly crop, for them to reap the benefits, or rather the refining influences of sentiment, supposing, of course, that progress has not eliminated these considerations from the mind of the nation, a remote contingency it is not pleasant to imagine. Admiration for these modern additions to our hardy borders is, of course, unqualified; many rival the Orchids in their marvellous beauty; comparison with the old, old-fashioned favourites would be invidious, and they do have and deserve a large share in our hearts and borders, a little corner of which we may, I think, still keep for those for which I plead.

Consistent with the circumstances under which I may be placed I indulge in this hobby. Some of the flowers are so modest that it will be as well not to mention their names, and I own to the weakness of feeling constrained to offer to my gardening friends an apology if they do happen to notice them—an apology, mayhap, received in ominous silence, or eliciting the remark “old-fashioned” in a tone not quite complimentary, a remark capable of self-application. Alas! I fear it is the case, and I plead for this bit of poetry in my life. A busy life is possible to be somewhat of a lonely one; one does not meet too many friends in its walks, and I cannot turn my back on these old ones, though they be not quite *à la mode*. They speak to me of an old Kentish cottage garden, with its hedge of Lavender, the bush of Rosemary by the well, its promiscuous growth of Pinks, Larkspurs, Scarlet Lightning, Golden Rod, Hollyhocks, Cabbage Roses, Moss Roses, London Pride, Honesty, and many, many others, which not only filled the borders, but had a habit of stepping over the edgings into the walks, to be respected even there. And that old cottage covered with Sweetwater Vines, bearing profusely and ripening too, except in one particular spot, the radius of reach for two boys from the old lead casement of a bedroom window. Was any fruit—stolen fruit—so sweet as that, or any garden so comprehensive? I thought not then, though on seeing that garden after years had rolled away I was surprised to see how small it was. On a later trip it was gone, swallowed up by the modern Babylon with its surroundings of trees and fields.

Those old-fashioned people, what pleasures they derived from their gardens! Have these pleasures increased with us? Probably the cares have, and how generous they were in giving! It was an unwritten law that friends on a visit from town should carry back a bit of the country with them in the shape of a real honest old-fashioned nosegay, fragrant, long-stalked, surrounded with green. These people believed in herbs too, in the virtues of strong infusions of Ground Ivy, Agrimony, Mint, Horehound, and other bitter potions, good no doubt, or at least should have been were those virtues in relative proportion to their nauseousness; but, as I say, they believed in them, and faith completed what the other failed to effect. And what was good for them was a remedy for all the ills that their cattle were heirs to, for the then locally celebrated Dr. C— had no other ingredients in his pharmacopœia, a venerable man with flowing white locks, his title purely one of courtesy, no college had given him degrees; in fact, “book learning” was rather held by him in contempt, and we boys to some extent shared in the feeling. Two tin bottles strapped Gilpin fashion on his back held the potent drenches, to which the diseases (there could have been but two then) were supposed to yield, and if they did not, and the patient succumbed, Kismet! it was fate. Faith was unshaken, and the account was paid, it was only us boys who made disrespectful allusions on seeing the bill. “To kuring cow that dyed, 5s.” (this is a fact). The aromatic pungency of these herbs are a powerful air to memory—too powerful in this case some may think—they bring back forcibly the early pages of our life, and the old-fashioned flowers are the pictures to those pages. Do not let us tear them out, though they be fashion plates out of date; let us keep them till the volume closes with “Finis.” Others to come may do what seems to them befitting.

Those old-fashioned names, too, let us keep them, for they will not smell as sweet by any others. An old-fashioned gardener once

gave me roots of the most charming pink and blue flowers I had ever seen, the world to me then was all but a hidden book, I am near saying, would that it had kept so. Well, these flowers were “Pattakees”—do not turn up the botanical dictionary, dictionaries have not everything in them. “Pattakees” he told me, and Pattakees they were for years, till I found out the slight error in nomenclature, and the “book-larned” ones wrote it *Hepatica*. Good old Kingston! neither sons nor daughters did you leave to prevent your name being mentioned.

In no way has Fashion been more obtrusive than in bouquets, in which of later days so much has been sacrificed to size, and that means weight. What a burden for a lady to carry and hold for hours some of them are, but the imperious dame ordains it, and it must be, till she has run the cycle of shower and other bouquets, and completed it with, say, a thunder and lightning variety, and reverts to the simple posies of old times, which will be grateful to all, and which if smaller need not be less choice with the wealth of flowers now to hand.

The enterprise of modern times has brought the flora of the world to our islands, not alone the heat-loving plants, but many from the altitudes of mountain chains, suiting our own climate, and though we can give them that, we cannot reproduce the surroundings of their native habitats, and consequently lose their subtle charm. For instance, Mr. Burbidge has the Edelweiss happy on a wall in the Trinity College gardens, but we cannot say it is a home. They are there truly; but the flower spirit that hovered o’er “the meek dwellers mid yon terror-stricken cliffs,” comes not in the college gardens. With the old favourites, the old fashioned flowers of the long ago—with their simplicity, their fragrance and incomparable associations, these are the old friends that brightened the early steps on life’s rugged road. And though we have met with gayer and more showy dressed company on the journey, let us still keep them with their hallowed memories, until “we touch time’s farthest brink.”—E. K., *Dublin*.

HALF HOURS WITH GREAT AUTHORS.

THE TWIN ASPECTS OF CULTURE.

(Concluded from page 45.)

IN his trenchant prose, wherein fiery sentences are interspersed with many a mellifluous stream of graceful language and many a burning sarcasm, Carlyle drives home alike to hesitating and slothful minds the warm impulse of higher and more strenuous endeavour. His was the lofty and noble creed of improvement, and however severe may be the condemnation which has been passed on him it is certain that he influenced his generation largely for good. But inasmuch as the practical trend of his teaching lies rather in the direction of literature than gardening it may not be unwise to follow him directly no longer. We may strengthen ourselves with the inspiration, the essence of advancement and self-improvement, which are to be drawn from nearly all he wrote, and with this beacon-light to encourage us, try to reach the goal by our own paths.

THE BEST BOOKS.

A few years ago a vigorously conducted daily journal inaugurated a kind of plebiscite with a view to testing opinion as to the best hundred books, and popularised the scheme by the ingenious plan of getting a number of the leading politicians and writers to criticise the list. The result was full of interest, but equally full of confusion, for the various opinions were so conflicting that it was almost impossible to focus the light of the many minds which had been at work on any particular book or set of books. Probably if a gardening paper were to invite its readers to indicate what subjects they thought it most desirable for we of the younger generation to study, and what books to read, there would be divergencies of opinion just as great as those which prevailed when Mr. Gladstone and Mr. Chamberlain, Mr. Ruskin and Mr. Payn, together with scores of other celebrities, gave their views on the best 100 books which the community at large could read.

But if the matter is complex all the more reason for making the endeavour, even though a weak and imperfect one, to remove the kinks from the skein. In discussing this subject with a very intelligent young head gardener a few months ago, he gave utterance to what must be the sentiment of many. “What,” he asked, “am I to begin on?” Yes; that is the point. There are many things which anyone with a desire for improving his general knowledge would like to know, and the acquirement of which he would not object to work hard for; but he is puzzled and embarrassed, and wastes much precious time because there are so many ends to strive for, and no clear and definite course of getting at them. Let us place a few special subjects in line before us, not in any particular order, but merely as they occur to mind—shorthand,

botany, chemistry, natural history and its branches, such as entomology, and languages. These are all subjects which young gardeners dally with, and perhaps something can be done with each by a gradual course of study.

NATURAL HISTORY.

This is a subject containing so many branches that one might spend a lifetime of study on that alone; and there must be some concentration. My strong advice to anyone would be, not to begin with any dry text-book, but rather with a few works of general interest; and the reason for this suggestion is a double one. In the first place, it is in every way desirable to take up a study with one's heart in it, with the mind inspired by the wondrous story of the world as a few great minds have taught it; and secondly, a grasp of some general principles will enable details to be pieced and dovetailed together with a clear object and grasp. There are many works which could be named that would admirably fulfil these wants, but it is not necessary to read them all, and I should, for more reasons than one—time and expense being two of them—thin them down to two or three. First, without a moment's pause, may be placed Darwin's great and inspiring work, "The Origin of Species" (John Murray), a book of transcendent interest and fascination, and with it might be linked the same author's "Fertilisation of Plants" (Murray). A third book which could be read by no one without the deepest interest and delight is Lubbock's "Beauties of Nature" (Macmillan), in which the accomplished naturalist takes us on to an eminence for a survey of Nature in all her marvellous and varied aspects. Quite as much could be said in favour of Huxley's "Physiography" (Macmillan), and one or all, according to means, should be read.

The study of these works cannot fail to broaden the reader's mind, instil into him higher conceptions of the planet on which he is so small an atom, and cause to spring up in him a burning desire for knowledge. Then is the time to turn to hard practical work, studying the form and life history of insects and fungi, the structure of plants and many other allied subjects. As a text book on insects, Miss Ormerod's "Manual of Injurious Insects" (Simpkin) may be strongly recommended, and Mr. Worthington G. Smith's work on "Fungoid Enemies of Crops" (Macmillan), would be a valuable help to the student.

BOTANY.

The works I have mentioned above will awaken a keen interest in botany as well as in natural history generally; but there is still another that I should recommend, and that is "Flowers and Their Pedigrees" by Grant Allen (Longmans). This is a most fascinating little book, and bears the impress of close botanical observation on the part of one who is now one of the most prominent figures in the literary world. It dives back into the remote ages of the past, and paints the developed and perfected flowers of to-day as they were when leaf was developing into stamen and pistil into petal. And having read it, the student will be eager to pursue an inquiry into botany and vegetable physiology generally. Finding himself thus situated, let him start on Hooker's "Botany Primer" (Macmillan), and follow it up with Masters' edition of "Hensley's Elements of Botany" (Macmillan).

CHEMISTRY.

Entomology, botany, and kindred subjects have so distinct a bearing on practical gardening work that I place them first. Chemistry should follow them closely. It is a subject of great interest, and also one which tends to give practical help. "Science," wrote Mr. G. W. Johnson in the "Cottage Gardener" years ago, "is the torch that lights the pilgrim upon the path of progress." It was a fine and true sentence. Chemistry teaches us the mystery and majesty of the elements around us, and enables us to illuminate practical work with the cheering light of knowledge and understanding. Many a tedious task is beguiled by the reflections which chemical and botanical knowledge enable the worker to enrol around it, for before his mental vision are unfolded the strange and beautiful processes by which Nature's simplest ends are gained. Text books—Roscoe's "Chemistry Primer" and the same author's "Elementary Chemistry," both published by Macmillan.

SHORTHAND.

I place shorthand lower on the scale than many advisers might, not because I recognise no usefulness in it, but because it is a mere mechanical accomplishment. In assigning it a subsidiary position I had better state, to avoid misunderstanding, that it is not because I am ignorant of the "winged art" that I do so, but for the opposite reason. Shorthand is good for young gardeners to know, but less important, I consider, than the subjects here placed before it. Text books: Pitman's "Phonographic Teacher" and "Phonographic Manual," with keys.

LANGUAGES.

A knowledge of languages is a source of pleasure as well as benefit, but enjoyable though it is to be able to read Alphonse Karr in the pure pellucid French which he wrote so charmingly and with so gay a wisdom, or to pierce through the nebulous clouds in which Goethe loved to enshroud his ripest thoughts, a young gardener would, I think, be in error to place a study of French and German before those to which priority has here been accorded. But I would dissuade no one from endeavouring to acquire some knowledge of Latin, for it is very helpful in all scientific studies, and will be valuable when the modern languages are being taken in their turn.

SUMMARY.

To summarise this attempt to throw light on the path of those who recognise that there is a second aspect to culture, let us not pursue a hesitating and variable course, dabbling with this subject and toying with that, but rather take them up one by one, and deal with each thoroughly before coming to the next. Let us also exercise a wise discrimination by placing the subjects in the order of their immediate usefulness and benefit, first giving attention to those which have a direct connection with practical work, and then coming to others, which, though good to know, have a less intimate bearing on our avocation. Finally, let us remember that knowledge for its own sake is valuable, and that even where no immediate tangible benefit may be visible from mental improvement, there is a rich reward in the happiness that it brings, and the gilding that it imparts to the commonest things of life.—W. P. W.

FORCING NARCISSUS TELAMONIUS PLENUS.

SURELY Messrs. Collins Bros. & Gabriel (page 107) do not possess all knowledge, while gardeners as a class are ignorant. I think as much reliable information has been spread broadcast by the latter as ever emanated from the former. The charge they make against me only displays their ignorance of facts, and is not worthy of a passing thought, because it carries no weight with it to those who know me and my work. If inspected, my work would compare favourably with that of your correspondents, who are evidently afraid somebody should rob them of some credit in forcing Narcissi. One thing struck me in a moment—namely, if they are as careless in forcing Daffodils as they appear to be in reading the *Journal of Horticulture*, there is no wonder that I can manage to get the old common Daffodil in bloom long before they are capable of doing so. I repeat what I have already said, that there is no difficulty in having the old favourite in flower in abundance early in January, and I should not hesitate to undertake to have them in bloom by Christmas. If your correspondents intended to gain information on this subject, all I can say is that they have a queer way of soliciting it.

The boxes actually measured 2 feet 3 inches in length, and 14 inches in width. In penning my previous note (page 88) I was writing from memory. The boxes of this size contained, without counting every one, from 130 to 140 bulbs. We anticipated putting 150 in them, but the bulbs being large they would not hold them, and probably no two boxes contain exactly the same number.

The bulbs were grown by my father at Donington, near Spalding, in Lincolnshire. I had several thousands from him, and picked out the largest for forcing, while the remainder were planted in various parts of the pleasure grounds. That the bulbs were remarkably fine there can be no question. I never had better, and the representatives from two large firms said they never saw better, and wanted to purchase the remainder of the stock, but they were too late.

I do not think that a single bulb produced less than two flowers, the majority had three, and many had four fine large blooms; the boxes were one mass of flower. I have too much to do to count the exact numbers, but a box is still here, and Messrs. Collins Bros. & Gabriel, or anybody else if they doubt my statement, can come and count both the bulbs and the flowers that have been cut. What more can I say fairer on that point? We had a large dinner party the first week in January, and the groundwork of the table was filled with 150 blooms of the common double Daffodil, with its own foliage arranged in small glass globes. After removing this number from the box it was difficult to tell where they had come from. I have a number of boxes of a smaller size, and filled with bulbs, which I am trying to keep back. These have come into flower in a cold house, and are equally as full of bloom; they can be seen by anybody up to the 17th inst., when the bulk of them will be cut. I always regarded N. obvallaris as the earliest, but it forces no better, and is no earlier than the old common Daffodil, and there is no comparison between the two for bulk and beauty. As an early single obvallaris is certainly useful, and worth growing.

I have seen many bulbs ruined by the method they are forced, but the observant learn from failures as they proceed. None of these failures ever trouble me now. I have not forced 150,000 various Daffodils in one season, but for nine or ten years I forced something like 80,000 a year of various bulbs, and therefore ought to know, if I do not, something about the matter. For the same employer and in the same garden I had to have Lily of the Valley by the 5th of November. If Messrs. Collins Bros. & Gabriel do that they will find it not easily

managed with imported crowns. Perhaps in Mrs. Heywood's time as much flower forcing was carried out at Norris Green as in any private place in the country. We always had a wealth of flowers, as hundreds of persons can testify.

I have stated in the *Journal of Horticulture* many times how bulbs should be forced, and I may do so again in time to be of service to growers for another season. Daffodils are certain to be in larger request than ever in the near future. Small occupiers of land might do a good deal worse than grow a few thousands of these and other bulbs for sale annually. They will pay them better than Potatoes.—WM. BARDNEY, *Osmaston Manor Gardens, Derby.*

NARCISSUS obvallaris, as remarked by your correspondent Mr. W. Bardney (page 88), may not be quite so free in flowering as the double N. Telamonius plenus, but when grown in its adopted home (Tenby) it is certainly very little if anything behind it. It does not flourish so well in some parts of the country as in the neighbourhood of Tenby, but here it is in great request. With only a gentle forcing we have it in bloom by the new year, and a box of bulbs will yield a rich harvest of one of the most useful of Daffodils. Growers in the neighbourhood are alive to its value, and some thousands of blooms find a market when forced. It has the great advantage of lasting a long time in a cut state, and nothing travels better. I have never yet endeavoured to force them into bloom before Christmas, as they are scarcely wanted before that time; but I should imagine by the readiness with which they respond to the little heat necessary to get them into flower by that time they may be had earlier if desired.

In the neighbourhood of Tenby, where doubtless they were originally imported, N. obvallaris flourished a few years ago in great luxuriance, and one field in particular near the town was a sight worth seeing when the plants were in bloom. The hedges around the farm and cottage gardens were often crowded with blossoms, and but little value was placed on them; but since such a great demand has arisen for the flowers the neighbourhood has been almost decimated. Local dealers readily bought the bulbs, and the cottage gardens had to be watched to prevent them being stolen. The rush for them has, however, happily ceased, and as they increase rapidly it is to be hoped the few remaining may do so in peace.—TENBY.

NOTES ON BIRDS.

ON page 70 "A. L. B. K." informs us that it is the blue tit which takes his fruit buds. I have not the previous numbers of the *Journal of Horticulture* to refer to on the subject, therefore am sorry I have given any trouble on that account. I repeat that it is not "cavilling," in my opinion, to defend birds from destruction, as would probably be the case, and I have watched so closely for so many years and have proved unmistakeably that they were taking brown scale, cockle scale, aphides, grubs, caterpillars and moths' eggs from my fruit trees instead of the buds, and there the matter must rest so far as I am concerned.

Respecting imprisoning bullfinches, as hinted at by "A. L. B. K.," I am pleased to hear he has not the heart to do it and hope he has no occasion to do so. I choose the plan as the least of three evils—allowing my fruit buds to be cleared off wholesale, destroying the crops, and also of permanently damaging the trees, for once they pinch off a bud with their nipper-bills no future growth takes place to form spurs or boughs for the formation of the tree. Shooting I dislike for several reasons, especially in the trees or bushes.

"Imprisoning" by catching has its objections I admit. I have a pair of birds which seem very happy and contented. The cock sings to his mate, and of course to me, most of the day; they have a cage 4 feet long by 1 foot 6 by 1 foot to fly about in, plenty of seed and water for drinking and bathing, of which they are very fond, no enemies to contend against, but delicacies of the season in the way of natural food when the berries are in season, spare spurs of fruit buds from pruning, green food, such as groundsel and chickweed, and plenty of rough grit to supply their gizzard mills to grind their food. These are intended for hints to others if they feel inclined to follow my example.—J. HAM.



LÆLIA ANCEPS ASHWORTHIANA.

There are many varieties of L. anceps in cultivation, but few are so distinct as that now under notice, and which is depicted in the illustration (fig. 19). A plant of this grand form was exhibited by Messrs. F. Sander & Co., at the Drill Hall, on the

16th ult., and a first-class certificate was awarded for it by the Orchid Committee of the Royal Horticultural Society. The sepals and petals are white. The lip is very fine, white, with pale purplish-blue veins. It is a chaste and beautiful flower when seen at its best.

CÆLOGYNE CRISTATA.

CÆLOGYNE CRISTATA is a charming Orchid and popular with all growers. No garden where choice white flowers are in demand through January, February, and March should be without a few plants. It is not difficult to grow. It is an evergreen plant, and its growth is made after flowering. The flowers last nearly five weeks if not in too much heat and kept free from damp. The plants will succeed on blocks or in pans. When on the former



FIG. 19.—LÆLIA ANCEPS ASHWORTHIANA.

more attention is necessary as regards water; therefore I prefer them grown in pans. The compost should consist of chopped sphagnum moss, peat, sand, and plenty of broken potsherds. The drainage must be abundant, the pans being half filled with crocks, as liberal supplies of water are necessary during the period of growth.

This species can be grown well in an ordinary plant stove where the temperature is between 55° and 60° at night, with the usual rise in the day. It enjoys a good rest, and its fleshy pseudobulbs allow of it being kept tolerably dry at the roots, and it is much benefited by being placed in cooler quarters after the growth is completed, but should not be in a lower temperature than 45°. It is necessary while the plant is making its growth to shade it from the sun, yet in the declining months of the year after the growth becomes somewhat ripe it should be gradually exposed to more light and a cooler atmosphere. If any plants are unhealthy they must be turned out of their pots, the roots washed, and then placed on blocks with a little moss, and suspended from the roof of a house where a temperature of about 60° is maintained. They will soon make fresh roots, and when sufficiently recruited can again be placed in pans.—SPECIALIST.

DENDROBIUM BENSONIÆ.

THIS is a handsome species, and a great favourite with Orchid growers. It is adapted for culture either in a pot or on a block, but its pendulous habit especially suits it for the latter mode. A warm and light position in the East Indian house appears to meet its requirements, with liberal supplies of water during growth; and a well-marked season of rest in a cooler position will induce it to flower freely.

It is a native of Moulmein, where it is found growing upon the branches of trees in exposed localities. The stems are 1 to 2 feet long, pendulous, and bear a few linear leaves, the flowers being produced two or three together near the extremity of the stems. They are usually 2 or 3 inches in diameter, of fine substance; the petals broad, and, with the sepals, are white, the lip being rounded margined with white; the centre a deep orange, and two blotches of rich purplish crimson. The flowers are produced in the summer months, and the plant continues attractive for about three weeks, so that it is by no means a fleeting beauty.—C.

ROYAL GARDENERS' ORPHAN FUND.

THE supporters of the Royal Gardeners' Orphan Fund held their annual general meeting at the Cannon Street Hotel on Friday, February 9th. Dr. Hogg occupied the chair, and there was a moderate

ROYAL GARDENERS' ORPHAN FUND.—CASH STATEMENT FOR THE YEAR ENDING DECEMBER 31st, 1893.

RECEIPTS.				£	s.	d.
To Balance from last Account ...	...	...	...	£567	2	10
„ On Deposit with Bankers ...	...	...	...	300	0	0
„ Subscriptions, General ...	...	...	...	363	9	6
„ Ditto Collected by Local Secretaries ...	...	...	...	68	1	6
„ Donations, including proceeds of Sale of Flowers, Entertainments, Boxes, Opening Gardens, &c. ...	...	...	...	261	0	3
„ Ditto Collected by Local Secretaries ...	...	...	...	86	17	8
„ Annual Dinner ...	...	...	...	368	15	0
„ Jubilee Gift from Messrs. Hurst & Son ...	...	...	...	100	0	0
„ General Card Collection ...	...	...	...	90	19	9
„ Advertisements in List of Subscribers ...	...	...	...	38	0	3
„ Dividends on Stock and Interest on Deposit ...	...	...	...	181	13	8
				£2426	0	5

NOTE:—INVESTMENTS, &c.

2½ per cent. Consols ...	...	...	...	£6570	6	10
3 „ „ Canadian Stock ...	...	...	...	500	0	0
				£7070	6	10

attendance of subscribers. After the minutes of the previous general meeting, and the notice convening the present one, were read, the Honorary Secretary (Mr. A. F. Barron) presented the report of the Executive Committee, with the statement of accounts, which were subsequently adopted, as published, though we think there is an error of 10s. in them.

ANNUAL REPORT.

In presenting their sixth report, the Executive Committee rejoice in being able, at the end of a year which has been one of great trial to the managers of all charitable institutions, to congratulate the subscribers to the Royal Gardeners' Orphan Fund upon the continued prosperity of the Charity. The Committee regret that the receipts during the year do not show such a large total as the last published statement of accounts, while the cost of collection has necessarily been somewhat heavier; but when it is remembered that the commercial depression operated with much severity upon all engaged in practical horticulture, there is every reason to be gratified with the result of the year's work.

The great honour conferred upon the Fund early in the year by Her Majesty's command, that the charity should be called the Royal Gardeners' Orphan Fund, was extremely gratifying to the Committee, inasmuch as that the Royal recognition of the Fund places it in a high and honourable position amongst the charitable institutions of the land. Following upon this gracious act of recognition upon the part of Her Majesty the Queen, came the gratifying announcement that His Royal Highness The Duke of York and Her Royal Highness The Duchess of Albany had become subscribers to the Fund.

At the annual festival of the Fund, the Committee were fortunate in having the cordial co-operation of such a distinguished patron of horticulture as Baron Ferdinand de Rothschild, M.P., as Chairman, and the warmest thanks of the Committee are hereby tendered to him on behalf of the supporters of the Fund for his able and generous advocacy of the claims of the charity on that occasion. The Committee have the greatest pleasure in announcing that the Right Honourable The Lord Mayor of London, Alderman Tyler, has kindly consented to preside at the next anniversary festival on May 10th, when they hope that all horticulturists will heartily assist them in making the festival a distinct success.

During the past year fifty-six orphans of gardeners have received the benefits of the Fund at a cost of £722 2s. 6d.; and the Committee

recommend the election of five more this day, raising the total list of beneficiaries to sixty-one. It is deeply to be regretted that there must of necessity be twelve candidates whose election to the benefits of the Fund will have to remain in abeyance until the annual revenue be increased.

To Mr. N. N. Sherwood, one of the Vice-Presidents of the Fund and the head of the house of Messrs. Hurst & Son, the best thanks of the Committee are hereby accorded for his generous gift of £100 in commemoration of the celebration of the jubilee of his firm. Grateful thanks are also tendered to many other kind friends who have in various ways rendered valuable services to the Fund.

The members of the Committee who retire by rotation are Messrs. W. Bates, G. Bunyard, R. Dean, W. Marshall, H. Herbst, A. W. G. Weeks, J. Wills, and J. Wright, who, being eligible, offer themselves for re-election. The retiring Auditor, Mr. Sharp; the Treasurer, Mr. T. B. Haywood; and the Hon. Secretary, Mr. A. F. Barron, are nominated by the Committee for re-election.

EXPENDITURE.				£	s.	d.
By Allowances to Orphans ...	...	...	...	722	2	6
„ General Card Collection ...	...	...	...	46	13	10
„ Annual Dinner ...	...	...	...	129	13	9
„ Printing and Posting of List of Subscribers ...	...	...	...	32	15	0
„ Secretary's Clerk ...	...	...	...	£52	10	0
„ Printing and Stationery ...	...	...	...	50	19	3
„ Annual, General, and Committee Meetings ...	...	...	...	13	2	6
„ Postages ...	...	...	...	21	13	0
„ Bank Charges ...	...	...	...	0	11	6
„ Sundry Expenses (Petty Cash) ...	...	...	...	36	4	11
„ Purchase of £500 2½ per cent. Stock ...	...	...	...	490	13	6
„ On Deposit with Bankers ...	...	...	...	300	0	0
„ Balance at Bank ...	...	...	...	528	10	8
				£2426	0	5

Having inspected the Securities, and examined the Books and Vouchers supplied to us, we certify the above account to be correct.

(Signed) JOHN FRASER, *Leyton*.

WM. SHARP, *Chartered Accountant*, } *Auditors.*
11, King Street, Cheapside.

Dated, January 19th, 1894.

Dr. Hogg, in moving the adoption of the Executive Committee's report, remarked that the Fund was not supported in the way it ought to be by those who should be the most interested in it. He regretted very much to see that the subscriptions were decreasing instead of increasing. It was to be hoped that a stimulus would be given to the Fund, to enable the Committee to carry on their good work.

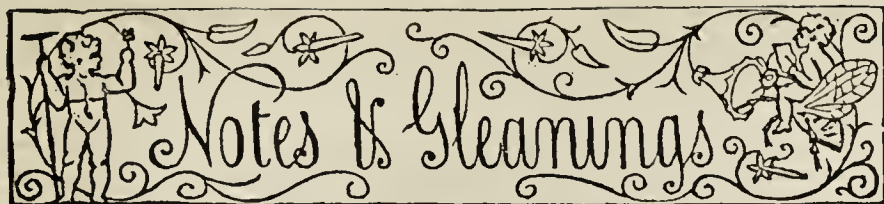
As mentioned in the report the retiring members of the Committee, Messrs. W. Bates, G. Bunyard, R. Dean, W. Marshall, H. Herbst, A. W. G. Weeks, J. Wills, and J. Wright offered themselves for election, and on the proposition of Dr. Masters these gentlemen were duly re-elected. Mr. T. B. Haywood was re-elected Treasurer, Mr. W. Sharp as Auditor, and Mr. A. F. Barron as Hon. Secretary. After some discussion, however, the resolution was put to the meeting and carried by a large majority.

Mr. J. Wright proposed that Baron Ferdinand de Rothschild, M.P., be elected a Vice-President of the Fund, and being seconded by Mr. W. Bates, this was unanimously carried.

Mr. W. Marshall then made a proposition, seconded by Mr. Weeks, to alter and amend Rule XII as follows:—To delete the sentence in line six, commencing "Any person," and ending with "six years," in the ninth line; and substitute therefor the following: "Any person or persons contributing the sum of £13 per annum in advance (or by prepayment of a lump sum computed at £13 per year for the number of years the child may be eligible to remain on the Fund), may place one Orphan on the Fund for an allowance of 5s per week, until the said child attains the age of fourteen years. The Executive Committee shall not be responsible in any way for the continuation of an allowance in the event of the said yearly payment lapsing." Mr. A. Dean opposed this resolution on the ground that it would be detrimental, and thought that if persons were thus invited to place children on the Fund, they should pay the cost of management.

Messrs. R. Dean, W. Poupart, and A. W. G. Weeks were appointed scrutineers of the voting papers for the election of five candidates for the benefits of the Fund. The poll closed at 4 o'clock with the following results, those marked with an asterisk being elected:—*Houston, Robert, 403; Keates, John, 117; Ward, Rosa Emily King, 276; *Blake, Robert Clement, 357; Barber, Felicia, 141; Crafter, Alfred Alexander, 109; Farrant, Amy, 95; Haycock, Frank Leslie, 117; *Rosier, Mary Ethel, 412; *Petrie, Jessie, 383; Pratt, Isabella Elizabeth, 118; Ritchie, Andrina Brown, 66; Small, Seymour, 143; Stevens, Reuben Charles, 54; *White, George William, 391.

In the evening the members of the Committee and a few friends had an informal dinner at Messrs. Bertram & Co.'s Buffet, Victoria Station, S.W., Mr. W. Marshall occupying the chair.



WEATHER IN LONDON.—For several days and nights recently windy weather prevailed in London as in other parts of the country, but comparatively little rain has fallen during the past week. Sunday was fine and gusty, similar weather occurring on Monday and Tuesday. Wednesday opened with a slight frost, and at the time of going to press it is bright and calm.

— WEATHER IN THE NORTH.—Up to Monday morning there was an unbroken record of violent gales with pelting sleet or rain for the previous eight days. Some of the nights were very wild, especially those of Friday and Sunday, when south-westerly winds frequently rose to furious gales. Serious flooding has continued over the country. Monday was calm, the evening very pleasant, and on Tuesday morning there were 4° frost.—B. D., *S. Perthshire*.

— THE DE CANDOLLE PRIZE.—We understand La Société de Physique et d'Histoire Naturelle of Geneva offers a prize, instituted by Mons. A. Pyramus de Candolle, for the best monograph on any genus or family of plants. The essays may be written in Latin, French, German, English, or Italian, and should be forwarded to the Secretary of the Society before January 15th, 1895.

— THE ROYAL NATIONAL TULIP SOCIETY.—The members of this Society held a meeting at the Bull's Head Hotel, Manchester, on the 3rd inst., Mr. C. W. Needham in the chair. The Rev. F. D. Horner, Burton-in-Lonsdale, was elected President of the Society, and the Earl of Derby, J. J. Coleman, Esq., M.P., Norwich; R. Cathcart, Esq., Pitcairnie, N.B.; and J. H. Beckett, Esq., Buxton, were elected Vice-Presidents. Mr. J. W. Bentley was elected Hon. Secretary, and Mr. C. W. Needham Hon. Treasurer. A resolution was adopted empowering the Secretary and Treasurer to make arrangements, subject to the approval of a meeting of the Society to be called in March, and a motion was also carried sanctioning the use of the name of the Society to a proposed Tulip Society to be formed in the South. The Royal Horticultural Society having invited Tulips at the Temple Show on May 23rd, the earnest desire of the members was expressed that this might give an impetus encouraging the culture of the Tulip.

— FINE LILIES OF THE VALLEY.—We send you herewith blooms of *Convallaria majalis alba grandiflora* "Fortin var." The spikes are not so large as in previous years owing to the dry summer, still you will see the variety is distinct both in size of bloom and strength of spike. Under good cultivation it averages eighteen bells on a spike. It has received an award of merit from the Royal Horticultural Society, and a first-class certificate from National Horticultural Society of France. A coloured plate appeared in the "Revue Horticole," Feb. 16th, 1886. At present it does not appear to be as much known as its merits deserve.—LAXTON BROS., *Bedford*. [The spikes of bloom were very fine, the bells being large and sweetly scented.]

— BIRMINGHAM AMATEUR GARDENERS' ASSOCIATION.—The meeting of the above Association, held on Wednesday evening in last week was very well attended, and was presided over by Mr. W. W. Sanderson. The paper read on this occasion was given by a well known horticulturist, Mr. W. Dean, the subject chosen being "Hardy Fruits for Suburban Gardens and their Culture." The fruits he more strongly recommended were Apples, Pears, Plums, Gooseberries, Raspberries and Strawberries. The essayist gave practical suggestions on preparing the ground, planting, pruning, and training, and enumerated those kinds best suited for the district. The various insects which affected fruit trees were fully dealt with, and the best means of destroying and preventing them were mentioned. Messrs. T. P. Cope, Daniell, T. Gosling and W. B. Griffin exhibited plants and flowers (chiefly Hyacinths), and the usual awards were made. The next meeting will be held on the 21st inst., and will take the form of a discussion on seasonable subjects. Copies of the new programme and rules will be gladly supplied by the Honorary Secretary, Mr. W. B. Griffin, Derwent House, Moseley Road, and as the time is drawing near for greater activity in outdoor gardening, the Committee are looking forward to a large increase in the membership.

— DEATH OF MR. F. G. TAUTZ.—We regret to learn of the death of Mr. Frederick George Tautz, in his forty-ninth year, which took place at Dibdin House, Ealing, on the 1st inst.

— THE ROYAL AGRICULTURAL SOCIETY.—At the meeting of this Society held on Wednesday in last week it was unanimously decided to hold the Exhibition in 1895 at Darlington.

— MONS. CHARLES BALTET.—We are informed that this gentleman has been elected President of the Société Horticole Vigneronne et Forestière de l'Aube, one of the most influential societies of the kind in France.

— PETROLEUM AS AN INSECTICIDE FOR CUCUMBERS AND MELONS.—In reply to "A Single-handed Gardener," page 110, the following recipe may be of some service:—The white of two eggs, three tablespoonfuls of sugar, 1½ pint of water (cold), 2½ pints of petroleum; thoroughly mix for ten minutes, and use a wineglassful to 2 gallons of water. This emulsion will thoroughly mix with the water, and if put in a jar, well corked, will keep for any length of time. I have used it for all kinds of plants with good results.—H. WARREN.

— RELATIVE to the use of petroleum for Melons and Cucumbers "Tenby" writes:—"These plants are, as a rule, so free from any insects requiring such strong insecticides as petroleum to eradicate, that I do not suppose many gardeners have had a very extensive experience with it for such subjects. I well remember, however, a case in which a young man in charge of a house of Cucumbers syringed them with petroleum at the usual strength of a wineglassful to three gallons of water. The result, as may be expected, on such foliage was ruinous; the plants presented a spotted appearance wherever the petroleum settled on them. I have the greatest faith in petroleum as an insecticide in careful hands, and believe it to be almost unequalled as a cheap and effective cleanser; but I certainly should be very cautious in using it on such delicate foliage as either Cucumbers or Melons. I do not favour its use for Palms."

— HARDY FOLIAGE FOR WINTER DECORATION.—Mr. Herrin recently informed me that he proposed to bring up from Dropmore and exhibit at the Drill Hall on the 13th a collection of sprays or branches of various hardy evergreens that he is in the habit of employing to decorate the mansion during the winter. Dropmore is very rich in material of this sort, and includes a very beautiful variety. Branches or sprigs of these things endure very long, fully a month, in cool rooms; indeed, I think if the water be occasionally changed, and the bases of the stems cut, even much longer. Several of the more refined of the Conifera, *Mahonia aquifolia*, *Andromeda Catesbaei*, *Gaultheria Shallon*, *Pernettyas*, *Vaccinium ovatum*, and various other pretty things are all most useful.—A. D.

— GOLDEN AND SILVER VARIEGATED PELARGONIUMS.—Anyone imagining that many of these once popular bedding and decorative plants had gone out of cultivation would soon be undeceived could they see the remarkable stock at Swanley, where the constant demand necessitates their perpetuation. Of golden tricolors Mr. Cox, A. Bass, Mrs. Pollock, Mr. Bassett, Mrs. Walters; of bronzes Jubilee (very fine), Zulu, Black Douglas, MacMahon; and of silver tricolors Dolly Vardon, Prince Silverwings, Lady Dorothy Nevill, and Mrs. Miller, with numerous silver bicolors help to make up a large collection, and shows that plants lacking popularity in some directions find great favour elsewhere. It is really the case that yellow flowers are becoming again largely employed for bedding purposes, and the assumption that we may yet see all the old favourites employed for that purpose over again seems most probable.—D.

— BOURNEMOUTH AND DISTRICT GARDENERS' MUTUAL IMPROVEMENT ASSOCIATION.—Mr. Stephen Castle, Manager Ashford Vineries, Fordingbridge, read a paper on "The Tomato" before the members of the above Society on Tuesday evening, February 6th. Mr. H. Elliott, Stourvale Nursery, Christchurch, occupied the chair. Mr. Castle detailed the mode of culture he has followed with much success for many years, and in the course of his remarks stated that he grew his plants in somewhat heavy loam with occasional waterings of clear liquid manure, adding as top-dressings burnt refuse and "silicate" manure. He also condemned the practice of taking off too much foliage in order to ripen the fruit, and concluded with a selection of some of the best varieties, and remarks on diseases and insect pests. A good discussion followed, and numerous questions were asked. At the close Mr. Castle received a vote of thanks for his instructive paper.

— **SOUVENIR DE LA MALMAISON CARNATION.**—A correspondent, "C. E.," desires to know when this Carnation was introduced into this country, and how it derived its name.

— **SOLUBLE PETROLEUM.**—The articles in "our Journal," signed by "Practice," on Rose growing under glass are good reading, and justify his cognomen. Would he kindly state, in case I misapprehend his meaning, what is the "Soluble Petroleum" he names in last week, page 106, early in the second paragraph?—S. S.

— **PRESENTATION AT KETTON HALL.**—The men employed at Ketton Hall presented Mr. and Mrs. Divers with a handsome chased silver teapot on the 9th inst., and wished them success at Belvoir Castle Gardens. The men were entertained at supper by Mr. and Mrs. Divers, and a very pleasant evening was spent. Mr. R. Gilbert of Burghley Gardens proved a most excellent chairman.

— **GARDEN EDGINGS.**—I should like to add a word or two in praise of the Sea Pink (*Armeria vulgaris*) as an edging to herbaceous borders in the kitchen garden or flower garden, to those advocated by "W. N., *Badminton*" (page 87). The plants flower more or less from April to September. They are easily increased by division, and I find they require to be parted and replanted every two years to keep them in good order. The Sea Pink grows wild on the rocks around here.—J. M., *Bicton*.

— **THE BLACK CALLA.**—I saw this quaint Aroid in bloom the other day at Swanley, where very large numbers of the white variety are blooming also, chiefly to supply the large demand for funeral wreaths and crosses. Mr. Cannell informed me that the call for the dark-flowered form, *Arum sanctum* or *palestinum*, was now becoming so great for the same purpose that even with a large stock it was difficult to keep up the supply. Just one or two of these spathes introduced into a wreath with white ones had helped to create a great demand for them.—D.

— **FRUIT AND FLOWERS FROM THE CHANNEL ISLANDS.**—Large consignments of fruit and flowers have been shipped from Jersey and Guernsey during the past twelve months. It is stated that close upon 90,000 packages were consigned to one salesman in Covent Garden Market alone. No fewer than 31,000 baskets contained Grapes, 22,000 baskets were filled with Tomatoes, upwards of 5000 baskets contained Figs and Melons, and flowers formed a large part of the remainder. It is estimated that between 200 and 300 tons of produce from these islands were disposed of at one establishment in the year.

— **VIOLETS IN IRELAND—A GOLDEN VISION (PAGE 90).**—I send the explanation, as printed in the publication in which the statement appeared, of Violets being "none less than a shilling a piece." It is as follows:—"Violets.—In a recent issue we gave a few notes on Violet growing at Killadoon, Co. Kildare, and by a printer's error were made to say that 'Violets were none less than a shilling a piece.' Our attention has been called to the error by a writer in a contemporary describing it as a Golden Vision; the idea of twenty Violets to the pound sterling; but we hasten to dispel any thoughts he may have in taking such a short cut to fortune by growing them. We referred to the size of the Violets, not their value, and the correct reading is the Violets were 'none less in size than a shilling a piece.'" It was not "blarney," it seems, but the printer's fault, brought out at last; so farewell to the Golden Vision; but what is the size of "a shilling a piece"? Oh, my country!—PADDY.

— **EARLY BULBOUS PLANTS IN IRELAND.**—Mr. Herbert May, Markree Castle Gardens, Collooney, Co. Sligo, writes:—"Amongst the most interesting of hardy plants in bloom on the rockery here is *Crocus Sieberi*. I have it planted in a mass, carpeted with *Sedum glaucum*, which heightens the effect of the flowers. It is a most desirable plant for early flowering; if grown in a pot would be useful for indoor decoration. *Crocus minimus* I have growing in a pot; it is a tiny flowering plant. I could not trust it planted out in this very wet climate, but prefer to cherish it because it is most interesting to watch its development in spring. *Narcissus bulbocodium* I wish to recommend for growing in pots. I have good strong-flowering bulbs of it, and it has proved useful for indoor decoration. Last year I had over thirty-five flowers growing in a 6-inch pot, and this season they look equally as well. For outdoor work they last about two years, and then dwindle off. Well ripen the bulbs after flowering, and repot every year in a mixture of good sandy loam, keeping dry until new growth is well advanced are the secrets of success."

— **GARDENING APPOINTMENT.**—Mr. A. Martin, for the past fourteen years gardener to the late C. J. Parke, Esq., of Henbury House, Wimborne, has been appointed head gardener to the Right-Hon. Lord Stalbridge of Metcombe House, Shaftesbury, Dorsetshire.

— **WOOLTON GARDENERS' MUTUAL IMPROVEMENT SOCIETY.**—On Thursday evening in last week Mr. R. G. Waterman read his prize essay on "Selection and Cultivation of Hardy Fruits" for the district. The Rev. G. H. Spooner, the donor of the prize, presided. The essay was one of considerable merit, and provoked a long discussion. Mr. B. Cromwell strongly advocated the wrapping of choice Apples in paper, and exhibited samples, also of those which had not been wrapped; the former being quite firm while the latter were beginning to shrivel. A vote of thanks to the Chairman closed the meeting.—R. P. R.

— **EXPERIENCES WITH NATIVE GUANO.**—The Native Guano Company, 29, New Bridge Street, Blackfriars, London, E.C., send us a record of the experiences of hundreds of persons in various parts of the kingdom who have grown almost all kinds of garden and farm crops with the aid of the manure above mentioned. Surely nothing can be added to give weight to the very precise testimonials as authenticated by the names and addresses of the writers, and as these cultivators are evidently highly satisfied with the results they have achieved, so ought the proprietors of the manure to be gratified by the record they are able to publish, and which is worthy of attentive perusal.

— **KINGSTON GARDENERS' ASSOCIATION.**—The members of this body recently had an animated discussion on the subject "How to Make Chrysanthemum Shows more Attractive." Arising from that discussion is the proposal to hold amongst the members a little experimental Chrysanthemum Show, with the hope that by allowing a somewhat free hand to exhibitors means may be found to give effect to the result of the discussion. The classes mainly are for flowers shown in bowls or vases, with their own and other foliage. The classes will be small, as it is not desired to make any serious demand on a grower's resources. It is hoped that should any features be developed that are found to be specially satisfactory, it may then be possible to induce the local Chrysanthemum Society to adopt them into their schedule another year.

— **ROYAL METEOROLOGICAL SOCIETY.**—At the next meeting of the Society, to be held at 25, Great George Street, Westminster, on Wednesday, the 21st inst., at 8 P.M., the following papers will be read:—"Temperature, Rainfall, and Sunshine at Las Palmas, Grand Canary," by J. Cleasby Taylor, M.D.; "Report on the Phenological Observations for 1893," by Edward Mawley, F.R.Met.Soc.; "Comparative Observations with two Thermometer Screens at Ilfracombe," by William Marriott, F.R.Met.Soc. The Council have arranged to hold, from April 10th to 20th, an Exhibition of instruments, photographs, and drawings relating to the representation and measurement of clouds. The Committee will also be glad to show any new meteorological instruments or apparatus invented or first constructed since the Exhibition in 1892, as well as photographs and drawings possessing meteorological interest.

— **MANURING ORNAMENTAL TREES AND SHRUBS.**—I can thoroughly recommend the plan suggested by "D. W." (page 66) of improving the growth of trees by the aid of digging trenches at convenient distances from the stem and filling them with manure and fresh compost. Not only do the trees make better growth, but their whole colour is improved. This latter is a decided point in ornamental trees. Instead of a Lebanon Cedar, for instance, possessing the deep tint of colouring which is natural, it too often in poor soils assumes a pale hue. In many instances such trees were not planted as they should be. I have an example of a Cedar that was put in a hole with one wheelbarrowful of bog soil twenty-five years since, by one of my men. The result has been anything but satisfactory. Six years since I treated this particular tree exactly in the way indicated by "D. W." with satisfactory results. As to the nourishing properties of liquid from cesspools, I have a striking instance of this in the park. A large Beech is growing not far from one of these cesspools, which is emptied four times a year. The bulk of the liquid is poured on the grass in the vicinity of the roots of this Beech. The advantage to the tree is apparent all the summer by the density in colour of the leaves and by the length of time that they remain green long after other trees in the same park have put on their autumn tints. Where trees are within reasonable distance of such cesspools it is not waste of time to pour it in such a manner that the roots feel its influence.—E. M.

— A SPORTIVE FUCHSIA.—Everyone familiar with Fuchsias knows that the variety Phenomenal is a huge double with red tube and sepals and a rich bluish-purple corolla. It is one of the finest doubles in cultivation. At Swanley Mr. Cannell has a couple of sports from this variety, but oddly enough occurring on the same plant. In one the corolla is a bluish mauve, and the other of a pure white. These are two important additions to our stock of giant Fuchsias.—D.

— DEVON AND EXETER GARDENERS' SOCIETY.—Members of this Society held their fortnightly meeting at the Guildhall on the 7th inst., when Mr. Alfred Tucker read a paper on "Kew and Kew Gardeners." Kew, the essayist said, was regarded by most Londoners merely in the light of a public park. It was in reality a Botanical Institution, which could boast of a collection of plants brought from

studying his latest discoveries in connection with the materials in the Herbarium, has presented a century of dried plants, consisting of new, rare, and interesting species, chiefly of his own collecting. The same gentleman has presented a copy of the first part of his illustrated work "Icones Orchidearum Austro-Africanarum." It contains fifty, with few exceptions, coloured plates of South African Orchids. The figures are excellent, and the analyses of the flowers very complete. From Mr. E. E. Galpin of Queenstown, Kew has received a parcel of about sixty species of dried plants, including many of great interest, among them a flowering specimen of *Sterculia Murex*, described in the "Kew Bulletin" (1893, p. 155). A figure with a fuller description will shortly appear in "Hooker's Icones Plantarum," t. 2278. Mr. T. L. Bullock, H.B.M. Consul at Newchang, has presented a collection of about 150 species from North China. From Mr. E. Whittall, Smyrna, Kew has



FIG. 20.—*CORNUS BRACHYPODA VARIEGATA*.

every known quarter of the globe, which no other country could equal. In the world of science it played an important part; its commercial influence was of value to the Mother Country and her Colonies, and it was acknowledged by all to be one of the best training schools for horticulturists.

— PRESENTATIONS OF DRIED PLANTS TO KEW. — Professor C. S. Sargent, Director of the Arnold Arboretum, Brookline, Massachusetts, has presented to Kew the plants collected and dried by Mr. W. W. Rockhill, formerly Secretary of the United States Legation at Peking, on his last adventurous journey in Mongolia and Central Tibet. The collection consists of about fifty species, some of them probably undescribed. It will shortly be worked out and the results appended to Mr. W. B. Hemsley's forthcoming paper on the plants collected by Dr. Thorold, who accompanied Captain Bower on his equally memorable journey from Western Tibet to China. Dr. Rowland has sent a further collection of about 300 dried plants from Lagos, which, with previous collections recorded in the "Kew Bulletin" (1893, p. 146), have been approximately determined, and the duplicates distributed to other botanical establishments with which Kew exchanges. Mr. Harry Bolus, F.L.S., a resident near Cape Town, who has been some months at Kew

received another century of dried plants sent chiefly with the view of a selection being made of such as were deserving of cultivation. Mr. H. N. Ridley, F.L.S., the Director of the Gardens and Forest Department of the Straits Settlements, has sent a further collection of dried plants from Malaya, numbering some 500 species; and Mr. Curtis, Assistant Superintendent at Penang, a collection of 100 species, partly from Siamese territory.—("Kew Bulletin.")

CORNUS BRACHYPODA VARIEGATA.

AMONG variegated foliaged shrubs the above mentioned *Cornus* is probably destined to take a foremost position, inasmuch as a fine specimen of it forms a most effective object. Branches of it were shown by Messrs. J. Veitch & Sons, Royal Exotic Nurseries, Chelsea, at a meeting of the Royal Horticultural Society last year, and on which occasion a first-class certificate was awarded for the exhibit. The leaves are nearly 4 inches in length, the centre of each one pale green, blotched with a deeper shade, and the deep margin creamy white. Fig. 20 represents a spray of this beautiful shrub.



NATIONAL ROSE SOCIETY GOLD MEDALS.

CAN anyone tell me the exact dates of and place of award, names of the Roses, and last, but not least, names of all the winners of our gold medals for new Roses? I am aware that Messrs. Alex. Dickson & Sons, of Newtownards, our greatest hybridisers, have in recent years won several of these guerdons of the highest rank amongst our prizes. Also that Mr. George Paul, Mr. Wm. Paul, and Mr. C. Turner have won them. But where is it recorded? Many, I myself amongst them, consider the gold medal for new Roses the "blue ribbon" *par excellence* of the Rose contests, and the winners thereof are conferring, or have conferred, a benefit on all rosarians by the introduction of valuable new varieties. Although fashion or improvement in hybridisation may cause a gold medal Rose to become in course of time of somewhat less importance than when introduced, yet none the less the winner should have his feat recorded in our Rose annals. There is a heading in our Society's annual reports for "winners of the National Rose Society's medals" in each year, but for some reason there is no record given of the gold medal winners for new Roses, so that the heading seems to be somewhat of a paradox! In the future could not a page be each year devoted to record these triumphs in Rose culture, now practically allowed to lie forgotten in the cold shade of oblivion? Surely they are entitled to some small niche in our temple of fame! "Palmarum qui meruit ferat."—CHARLES J. GRAHAME.

ROYAL HORTICULTURAL SOCIETY.

FEBRUARY 13TH.

THE COMMITTEES.

THERE was a very fine display of ornamental foliaged and flowering plants at the Drill Hall, Westminster, S.W., on this occasion, the large building being well filled. Orchids, too, occupied a considerable space, whilst fruit formed a striking feature. There was a much larger attendance of Fellows and the general public than usual.

FRUIT COMMITTEE.—Present: Philip Crowley, Esq. (in the chair); Rev. W. Wilks, Dr. Hogg, with Messrs. John Lee, H. J. Pearson, G. Bunyard, T. Francis Rivers, J. Cheal, G. Taber, H. J. Veitch, G. Goldsmith, T. J. Saltmarsh, A. Dean, C. Herrin, J. A. Laing, T. Glen, J. Hudson, G. Wythes, G. H. Sage, F. Q. Lane, G. Woodward, H. Balderson, J. Smith, G. Norman, J. Willard, A. Moss, and J. Wright.

Most of the time of the Committee was spent in the examination of Apples. Some remarkably fine specimens were placed on the table, as well as some of a different character. The most promising of new English raised Apples was Mr. Bannister's Standard Bearer, the fruits of which resemble the Cobham, a variety of the Blenheim. The tree is said to be a good grower and free bearer. An award of merit had been previously granted for the variety, and some of the members thought the tree should be seen in bearing before giving the variety a certificate. It was eventually decided to ask Messrs. W. Iggulden and A. Young, who reside in the neighbourhood, to inspect the trees in bearing. Several, probably most, of the members declined to vote, and those who did hold up their hands could give no assurance that either of the excellent gardeners named are practically acquainted with the true Cobham. There are many trees so called and fruits exhibited which are not true. Perhaps they will say whether they know the variety or not.

Mr. W. Holmes, Langley, Derby, sent a new kitchen Apple, Langley Pippin, medium sized firm fruits, but not equal to existing varieties, and therefore passed. Mr. J. Williams, The Gardens, Mynehead Court, Wellington, sent Fishpond Seedling Apple, but the fruits were not in a condition for any estimate to be formed of the merit of the variety. R. Shaw, Esq., 19, Bernard Street, Russell Square, sent a seedling highly coloured Apple, but it was not considered of value. Its proposed name was Chrystie's Pippin, a name that belongs to a totally different variety.

Mr. W. Roupell, Harvey Lodge, Roupell Park, S.W., sent grand fruits of Newton Wonder and Melon Apples, and a cultural certificate was awarded. Messrs. Pearson & Sons, Chilwell, the introducers of Newton Wonder, also sent handsome fruits of it, and received a vote of thanks. The Committee felt they had full justification for on a previous occasion certificating this Apple, which is likely to prove a standard variety.

Mr. G. Woodward, Barham Court Gardens, Maidstone, sent magnificent fruits of Lane's Prince Albert, Annie Elizabeth, Lincoln Pippin, and Roi de l'Angleterre. The Lincoln Pippin is a true Codlin of large size, firm yet tender in the flesh, and of good quality. Roi de l'Angleterre is a large fruit of excellent quality. An award of merit was granted for it, and a cultural commendation for the collection. Mr. John Watkins, Pomona Farm, Hereford, sent excellent and highly coloured Apples, including Flanders Pippin—large, heavy, richly coloured, keeping till May; Forester, also a fine heavy fruit, somewhat

resembling Reinette de Canada in appearance; Scarlet crimson Costard, a fine "selling" sample; Stoke Edith Pippin, a favourite Herefordshire Apple, used in cooking and dessert; also the "Winter Queen of Herefordshire." This, as Dr. Hogg explained, is the true and original old Winter Queen, totally distinct from and much larger than the Apple largely sold under the name, and which is really the Winter Pearmain. Mr. Watkins' Apples, with the others previously mentioned with approval, far exceeded in size, appearance, and value any imported fruit now sold in London markets and shops.

Mr. P. Davidson, The Gardens, Iwerne Minster, sent a box of ripe Tomatoes the Comet, resembling Sutton's Earliest of All, and a vote of thanks was accorded. A similar mark of recognition was conveyed to Mr. G. W. Fyfe, The Gardens, Lockinge Park, for excellent bunches of Black Alicante Grapes. Collections of about seventy dishes of Apples and Pears were staged by Messrs. Lane & Sons, Berkhamsted, and Cheal & Sons, Crawley, for which silver-gilt and silver Knightian medals were voted respectively and unanimously.

FLORAL COMMITTEE.—Present: W. Marshall, Esq. (in the chair), Messrs. J. Laing, H. Herbst, R. Dean, H. B. May, G. Stevens, H. J. Jones, C. F. Bause, J. Jennings, T. Godfrey, C. Jeffries, R. B. Lowe, J. H. Fitt, J. D. Pawle, W. Bain, C. E. Pearson, C. J. Salter, G. Nicholson, G. Gordon, C. Noble, T. Baines, J. T. Bennett-Poë, E. Mawley, G. Paul, H. Turner, R. Owen, and J. Walker.

A magnificent collection of Camellias was staged by Messrs. Wm. Paul & Son, Waltham Cross. Cut blooms were arranged in boxes, and plants in pots, carrying handsome flowers, were also shown. Amongst the best were Princess Charlotte, Marchioness of Exeter, Adelina Benvenute, Exquisite (first-class certificate, see below), Countess of Derby, and Auguste Delfosse (silver-gilt Flora medal). Mr. Chas. Turner, Royal Nurseries, Slough, exhibited a dozen pots of double white Primula, Mrs. A. F. Barron. The plants were dwarf and splendidly flowered. A large group of Cyclamens was also staged by Mr. Turner (bronze Banksian medal). A group of Cyclamens shown by Mr. J. Odell, Hillingdon, comprised some fine specimens (silver Flora medal). The Primulas and Cyclamens of Messrs. H. Cannell & Sons, Swanley, were one of the finest features of the Show. Amongst the most noticeable of the Primulas were Cannell's White, Duchess of Fife, White Perfection (award of merit, see below), Her Majesty, Eynsford Blue, and Intensity. The Cyclamens consisted of finely grown plants, which were literally covered with flowers (silver-gilt Flora medal). A noteworthy collection of Dracenas was shown by Mr. C. F. Bause, Morland Nursery, South Norwood. The varieties Barroni (award of merit, see below), Souvenir de M. A. Thiers, Lord Wolseley, Madame F. Bergman, and Norwoodensis were amongst the most prominent (silver-gilt Flora medal).

Messrs. Paul & Son, the Old Nurseries, Cheshunt, staged superbly flowered specimens of Lilacs Madame Lemoine, Marie Legrange, and Madame Kreuter. The plants of Cœlogyne cristata in variety, staged by the same firm, were very beautiful (silver-gilt Flora). An interesting collection of alpine and other plants were also exhibited by Messrs. Paul & Son. Some baskets of Primulas, comprising Porter's Scarlet, Imogene, Hercules, Iris, Princess May, Aurora, and Vivid were shown by Messrs. J. Carter & Co., High Holborn. Mr. W. Kemp, Blandford Nursery, Upper Teddington, showed three dozen Hyacinths, the spikes of which, considering the earliness, were highly creditable. A box of blooms of Owen's Imperial Primulas was shown by Mr. R. Owen, Maidenhead. The colour in these was finely developed, and showed much diversity. The Cyclamens staged by Mr. J. May, Gordon Nursery, St. Margaret's, Twickenham, were good. Though not profusely flowered the blooms were grand both in size and substance. An award of merit was accorded for C. Sultan, which is described below (silver-gilt Flora medal).

Messrs. J. Veitch & Sons, Chelsea, showed flowering sprays of Amygdalus Davidiana alba, A. persica var. magnifica (first-class certificate, see below), and Daphne Genkwa. A group of foliage and flowering plants was arranged by Messrs. J. Laing & Sons, Forest Hill. The Orchids were fine, as also were the Crotons, Cyclamens, Acacias, and Palms (silver Flora medal). The Narcissi shown by Messrs. J. Veitch and Sons were splendid, and comprised obvallaris, Princeps, Golden Spur, odoratus, pallidus præcox, incomparabilis plenus, Soleil d'Or, and Telamonius plenus (silver Flora medal). Blooms of Rhododendrons Javanico-jasminiflorum in variety were staged by the same firm; also a pot of R. multicolor Mrs. Heal (first-class certificate, see below). Amaryllis Major Wilson, from Chelsea, received an award of merit (see below).

The Narcissi in pots exhibited by Mr. T. S. Ware, Hale Farm Nurseries, Tottenham, made a splendid display. The same firm also showed Crocuses, Hellebores, Irises, Hepaticas, and Lachenalias in fine form and variety (silver Flora medal). Messrs. Barr & Son, King Street, Covent Garden, staged Hellebores, hardy Cyclamens, Iris reticulata, Narcissus Cyclamineus, Chionodoxa Alleni, and Narcissus minimus, all taken direct from the open ground (bronze Banksian medal). A handsome specimen of Senecio Gheisbreghtii (syn. grandifolius) shown by Mr. Bain, gardener to Sir Trevor Lawrence, Dorking, was accorded a first-class certificate; as also was Pavonia intermedia Kermesina, both of which are described elsewhere.

ORCHID COMMITTEE.—Present: H. J. Veitch Esq. (in the chair), Dr. Masters, Messrs. J. O'Brien, H. M. Pollett, T. W. Bond, C. Pilcher, J. Gabriel, T. Statter, H. J. Chapman, J. Douglas, W. H. White,

Edward Hill, H. Williams, T. B. Haywood, W. H. Protheroe, and W. Cobb.

Messrs. F. Sander & Co., St. Albans, sent a fine group of Orchids, amongst which *Cattleya amethystoglossa*, *Odontoglossum Edwardi*, *Lycaste lanipes*, *L. costata superba*, and *Laelio-Cattleya* Hon. Mrs. Astor were conspicuous. A first-class certificate was awarded for the last named, a description of which will be found below (silver Flora medal). Messrs. Heath & Sons, Cheltenham, staged a small group of a seedling *Cypripedium* (*Boxalli* × *villosum*), and a few *Cattleyas*. Messrs. Hugh Low & Co., Upper Clapton, sent an interesting collection, which made a bright display. Amongst these a fine plant of *Cattleya Percivaliana* var., *Phalænopsis Schillerinum*, *Odontoglossums*, and *Cypripediums* in variety, were most noticeable (silver Flora medal). Messrs. W. L. Lewis & Co., Southgate, had a brightly coloured group, comprising *Lælia harpophylla*, *L. anceps Sanderiana*, *Trichopilia suavis*, and others (silver Banksian medal). Some cut blooms of Orchids came from the Royal Botanic Gardens, Glasnevin, and a botanical certificate was awarded for *Listrostachys porrigans*. R. J. Measures, Esq., Cambridge Lodge, Camberwell, secured a botanical certificate for *Pleurothallis Roezli*, and an award of merit for *Cypripedium Fraseri*. Mr. G. Young, Keyfield Nursery, St. Albans, gained an award of merit for *Phalænopsis Youngi*, which is described below. C. L. N. Ingram, Esq., Elstead House, Godalming, sent *Cypripedium* Captain Lendy, and an award of merit was adjudged. T. Statler, Esq., Stand Hall, Manchester, sent a fine plant of *Lycaste Skinneri alba*, Stand Hall variety. A cultural commendation was awarded.

Sir Trevor Lawrence, Bart., Burford Lodge, Dorking, had a large collection of choice species and varieties. The showy *Sophranites grandiflora*, *Ada aurantiaca*, *Dendrobiums* in variety, and *Masdevallia ignea* were conspicuous in this group (silver Flora medal). Botanical certificates were awarded for *Catasetum barbatum spinosum*, *Dendrobium purpureum candidum*, and *Masdevallia picturata*. Messrs. B. S. Williams & Sons, Upper Holloway, were also well represented, this firm showing a large collection of Orchids and other plants. The most noticeable Orchids were fine plants of *Dendrobium nobile*, *D. Leechianum*, *Cypripediums*, and *Odontoglossums* (silver Flora medal).

Messrs. J. Veitch & Sons, Royal Exotic Nurseries, King's Road, Chelsea, exhibited a collection of choice Orchids with other plants. The former included *Laelio-Cattleya Tydea*, and *Cypripedium Godseffianum*, for both of which awards of merit were adjudged (a silver Flora medal was recommended for the group). E. H. Woodhall, Esq., St. Nichol's House, Scarborough, had a fine spike of *Cypripedium Rothschildianum* (cultural commendation), and other Orchids.

CERTIFICATES AND AWARDS OF MERIT.

Amaryllis Major Wilson (J. Veitch & Sons).—A magnificent variety with large bright scarlet segments. The plant exhibited had one scape which bore three flowers (award of merit).

Amygdalus persica var. *magnifica* (J. Veitch & Sons).—An exceedingly beautiful early flowering *Amygdalus*. The flowers are semi-double, bright rosy red (first-class certificate).

Calanthe Baron Schröder (Baron Schröder).—This is a beautiful form, and one of the richest coloured *Calanthes* in cultivation. The lip is a deep crimson magenta shade, the sepals and petals being a little lighter (first-class certificate).

Camellia Exquisite (W. Paul & Son).—A splendid variety with fine blooms of a rosy cerise colour (first-class certificate).

Cyclamen Sultan (J. May).—A richly coloured variety, with dark crimson flowers (award of merit).

Cypripedium Godseffianum (J. Veitch & Sons).—The result of a cross between *C. hirsutissimum* and *C. villosum* Boxalli. The upper sepal is dark shining brown with a green margin, the petals being reddish purple spotted brown. The lip is lighter coloured than the petals (award of merit).

Cypripedium Fraseri (R. J. Measures, Esq.).—A distinct hybrid, the result of a cross between *C. hirsutissimum* and *C. Argus*. The upper sepal is reddish brown with darker veins, the petals being spotted dark chocolate. The lip is a rich reddish brown (award of merit).

Cypripedium Captain Lendy (C. L. N. Ingram, Esq.).—A very fine hybrid, being the result of a cross between *C. Boxalli* and "Chas. Canham". The upper sepal is large, shining brown, mottled green, with a light margin. The petals are similarly coloured, and the lip is buff and pale brown (award of merit).

Dracæna Barroni (C. F. Bause).—A useful decorative variety with broad dark brownish-green leaves margined with red (award of merit).

Dracæna Princess May (B. S. Williams & Sons).—An attractive narrow leaved variety useful for decorative purposes. The leaves are dark bronzy green margined red (award of merit).

Galeandra Devoniana (Walter Cobb, Esq.).—A pretty Orchid with brown sepals and white lip striped purplish crimson (award of merit).

Laelio-Cattleya Hon. Mrs. Astor (F. Sander & Co.).—This is a beautiful bigeneric hybrid, being the result of a cross between *Cattleya Gaskelliana* and *Lælia xanthina*. The petals and sepals are buff yellow, as is the base of the lip on the outside. The tip of the lip is bright violet magenta, the throat being orange and brown (first-class certificate).

Laelio-Cattleya Tydea (J. Veitch & Sons).—This is a pretty bigeneric hybrid. The parents were *Cattleya Trianae* and *Lælia pumila*. The sepals and lip are rosy mauve, the lip being a rich crimson (award of merit).

Phalænopsis Youngi (G. Young, Esq.).—An attractive species with medium-sized flowers. The sepals and petals are white tinted rose, the lip being spotted violet and reddish brown (award of merit).

Primula White Perfection (H. Cannell & Son).—A large flowered variety of sterling merit. The blooms are borne in huge trusses well above the foliage (award of merit).

Pavonia intermedia Kermesiana (Sir Trevor Lawrence).—An attractive plant, with brightly coloured magenta crimson flowers (first-class certificate).

Rhododendron multicolor Mrs. Heal (J. Veitch & Sons).—This is a charming dwarf-growing *Rhododendron*. The plants exhibited were about 9 inches in height, but profusely flowered. The blooms are an inch or so in diameter, white, with orange coloured stamens (first-class certificate).

Senecio Ghiesbreghtii (syn. *grandifolius*) (Sir Trevor Lawrence).—A very showy plant, with large heads a foot across of yellow flowers, and handsome leaves (first-class certificate).

THE ANNUAL GENERAL MEETING.

THE annual general meeting of the Royal Horticultural Society was held in the Council Room, 117, Victoria Street, Westminster, on Tuesday afternoon. Sir Trevor Lawrence, Bart., President of the Society, occupied the chair, and was supported by the members of the Council. There was a large attendance of Fellows, the room being well filled. After reading the notice convening the meeting, the Secretary, the Rev. W. Wilks, read the minutes of the previous annual meeting. Messrs. J. Cheal and H. Turner were appointed scrutineers of the ballot relative to the election of new members of the Council. Forty-two new Fellows were then elected.

Dr. Hogg moved a resolution that the best thanks of the Society be tendered the retiring members of the Council, Messrs. S. Courtauld, D. Morris, and G. Paul, for the services they had rendered during the past year. From the many years of experience of the Council and the Society he well knew that the office was no sinecure, and he had much pleasure in moving the resolution. Mr. W. Marshall seconded the motion, which was unanimously adopted.

Sir Trevor Lawrence, Bart., in moving the adoption of the Report, which was taken as read, said he believed it was the tenth occasion of this kind on which he had presided. If he compared the state of the Society now to what it previously was, it would almost exhaust the sources of gratification. Their position now was totally different to what it formerly was. There was a most cordial agreement between the members of the Council, and they did their best in forwarding the work. Reviewing the past year it would be seen that the sources of new Fellows were not exhausted, and in mentioning this he might refer to a few figures. In 1889 the subscriptions were £2136, and in 1893, £3258. The Fellows elected between January 1890 and December 1893 numbered 1657, being an average of 414 a year. Then to prove the popularity of the Journal of the Society, the sale in 1889 was practically none, and during 1893 copies to the value of £133 had been sold (hear, hear). They were indebted to the authors of the papers published in the Journal, and to the gentlemen who edited it. As regards the shows, they all knew how popular the one held in the Temple Gardens had become. This year it was to be kept open for three days instead of two as on previous occasions. Since 1888 the receipts from this Show had gradually increased until last year they amounted to £683, against a cost of £495, leaving a gain of £188. They were under great obligation to the Benchers of the Inner Temple for allowing them to hold their exhibition in the Gardens. With reference to Chiswick Gardens, these were maintained at an average annual expenditure of £1205, and the work accomplished there during the past year is referred to in the report. He could only find one thing about which to express regret, and that was the Show at the Agricultural Hall. From a horticultural point of view it was a splendid exhibition, and he was sure that no one went there without coming away satisfied. It was to be regretted, however, that the attendance was so poor on that occasion. One or two complaints had been heard that their fortnightly meetings were not sufficiently known. He did not know how this could be improved, but would be obliged if the representatives of the Press would render assistance. Financially the position of the Society was very good. The surplus was not quite so large as he should like to see, but they had recently been able to invest £1000 in consols (hear, hear). It had been suggested by a member of the Council that this sum should form the nucleus of a fund with which to provide a home for the Society in the not very remote future. (Cheers.) The Drill Hall was not an ideal place, but he did not feel so disposed to condemn it so strongly as had some Fellows. Sir Trevor concluded by eulogising the members of the staff, and being seconded by Mr. Cannell the report was adopted.

Mr. F. R. Parker suggested that the Society should hold provincial exhibitions in various parts of the country. There were, he was sure, many localities where the R.H.S. would be welcomed. Then as regards the Lindley Library, he thought that a catalogue of the books should be published, and means taken to make the conditions ruling the Library better known to Fellows. He considered the Journals of great value, inasmuch as they formed a link, as it were, connecting the home of the Society to the distant Fellows, and it would be a disaster were they discontinued.

Mr. W. Marshall inquired whether there was any truth in the statement regarding negotiations between the Royal Horticultural Society and the Imperial Institute. Mr. Ranger Johnson thought that the fortnightly exhibitions could be made known by a little judicious advertising.

Sir Trevor Lawrence, in replying to Mr. Parker, said, that since the failure of the provincial Show at Liverpool in 1886, which resulted in a loss of £1500 to the Society, they had not the courage to go further in that direction. They were willing, however, to do all that was possible, provided a guarantee against any loss to the Society was forthcoming. With reference to Mr. Marshall's inquiry, it was true that the Council had considered the advisability of going to the Imperial Institute, but after inspecting the space at disposal had come to the conclusion that it was not desirable to recommend the Society to go to South Kensington.

Dr. Masters observed that, as one of the Trustees of the Lindley Library, he agreed with Mr. Parker that a catalogue of the books should be printed. The Trustees were only allowed a moderate income to purchase the periodicals of any particular value and various books. Regarding the history of the Library, after the International Horticultural Exhibition of 1866 £1000 went towards the purchase of the Library, and the Society now subscribed towards it; but under certain restrictions the general public as well as Fellows have a right to make use of the books.

Professor Michael Foster proposed a vote of thanks to the members of the Council, which was unanimously accorded. After the scrutineers announced that Sir Alexander J. Arbuthnot, K.C.S.I., Sir John Edwards-Moss, Bart., and C. E. Shea, Esq., were elected on the Council, the proceedings closed.

REPORT OF THE COUNCIL FOR THE YEAR 1893-94.

THE year 1893 has again been one of steady work and progress for our Society.

Eighteen fruit and floral meetings have been held in the Drill Hall, James Street, Victoria Street, Westminster, besides the more extended Shows at the Temple Gardens on May 25th and 26th; at Chiswick Gardens on July 11th; and at the Agricultural Hall on August 29th, 30th, 31st, and September 1st; and lectures have been delivered at fourteen of the meetings. The number of awards has been as follows:—On the recommendation of the Floral Committee, 64 first-class certificates against 62 in 1892, 201 awards of merit against 156, and 6 botanical certificates against 2; on the recommendation of the Orchid Committee, 39 first-class certificates against 48 last year, 86 awards of merit against 72, 25 botanical certificates against 29; on the recommendation of the Fruit and Vegetable Committee, 16 first-class certificates against 27, and 23 awards of merit against 8 last year.

The Society's great Show held (by the continued kindness of the Treasurer and Benchers) in the Inner Temple Gardens, was a greater success than ever alike in the number of visitors, the quantity and quality of the exhibits, and the favour of the elements. The best thanks of the Society are due to all who so kindly brought their plants for exhibition or otherwise contributed to the success of the Show. We are glad to be able to report that the Treasurer and Benchers have granted us the use of the Gardens for three days in the coming year, instead of two.

The Society's general work of scientific experiment and investigation and of the practical trial of various plants has been going on steadily at Chiswick, under the superintendence of Mr. Barron. Trial has been made of 48 varieties of Onions, 63 of Peas, 104 of Strawberries, 68 of new Potatoes, 50 of Tomatoes, 23 of Celery, 20 of Runner Beans, and 24 of Endive. In the Floral department 400 varieties of Carnations and Picotees, 70 Pinks, 500 of Pæonies, as well as many varieties of Phloxes, Cannas, Sweet Peas, Violas, and Irises have been tried. Reports founded on the work of these Committees will be found in the Society's Journal, vol. xvi., parts 2 and 3, now issuing.

The following table will show the Society's progress in regard to numerical strength during the past year:—

DEATHS IN 1893.				FELLOWS ELECTED 1893.			
		£	s. d.			£	s. d.
Life Fellows	19	0	0 0	4 Guineas	5	21	0 0
4 Guineas	4	16	16 0	2 „	109	228	18 0
2 „	10	21	0 0	1 „	279	292	19 0
1 „	14	14	14 0	Associates	3	1	11 6
				Affiliated Societies	14	15	15 0
	47	£52	10 0		410	£560	3 6
				Deduct Loss	190	1	0
				Net Increase in Income	£370	2	6
RESIGNATIONS.							
		£	s. d.				
2 Guineas	31	65	2 0	New Fellows, &c.	410		
1 „	69	72	9 0	Deduct Resignations and Deaths	147		
	100	£137	11 0				
				Numerical Increase	263		
Total Loss	147	£190	1 0				

The "Journal" of the Society has been continued so as to enable Fellows at a distance to enter more fully into and reap the benefits of the study and work of those actively engaged at headquarters. Vol. xv., parts 2 and 3, and the first part of vol. xvi., were published during the year, and the second and third parts of vol. xvi. are now ready for issue. The Society has also published (i.), a monograph on Bulbous Irises, by Professor Michael Foster, Joint Secretary of the Royal Society; and (ii.) a complete list of Certificates to Plants, Flowers, Ferns, Orchids, Fruits, Vegetables, &c., granted by the Society from the

year 1859 to January, 1893. The Council commend these two volumes to the attention of the Fellows.

The Exhibition which the Society promoted at Chiswick on July 11th, was not supported with the local enthusiasm which the Council had been led to expect, nor was it such a success as to warrant a repetition. But it is proposed to hold a Conference in the Gardens, on September 25th, 1894, on the subject of Arboriculture, and in connection therewith, to devote the meeting at the Drill Hall, on June 12th, to the subject of Hardy Flowering Trees and Shrubs. Any information touching these subjects would be welcome, especially as to the hardiness, or otherwise, of any of the rarer flowering trees and shrubs.

The great autumn Show, held at the Agricultural Hall, on August 29th to September 1st, was, from a horticultural point of view, an unrivalled success, there probably never having been a finer display of combined autumn flowers and fruits seen in the Metropolis. The Council can but regret that the number of visitors was comparatively small, but as the Agricultural Hall Company reserved to themselves the sole right of advertising the Show, the Society is in no way responsible for this disappointment.

An examination in the principles and practice of horticulture was held on May 4th, concurrently at different parts of England, Scotland, and Ireland, a centre being established wherever a magistrate, or clergyman, or schoolmaster, or other responsible person accustomed to examinations would consent to superintend one on the Society's behalf, and in accordance with the rules laid down for its conduct. No limits as to the age or position or previous training of the candidates was imposed, and the examination was open to both sexes. 204 candidates presented themselves for examination, and the papers were divided into higher and lower grades. In the higher grade seventy-six entered, with the result that six were placed in the first class, twenty in the second class, thirty-six in the third class, and fourteen, failing to obtain 100 marks, were not classed. In the lower grade six candidates were placed in the first class, sixteen in the second class, thirty-eight in the third class, and sixty-eight were not classed. The names and addresses of the successful candidates, together with the number of marks assigned to each, will be found in the Society's "Journal," vol. xvi., part 1, page 151.

It is proposed to hold a similar examination on May 1st, 1894, and candidates intending to sit for it should apply to the Secretary, 117, Victoria Street, Westminster, some time during March.

In round number £1600 has been expended at Chiswick this year on the general work, and repairs and keeping up of the Gardens. The receipts from the Gardens by sale of surplus produce amount to £430, making the net cost of the Gardens £1170.

In conjunction with the Lindley Library Trustees, the Society's Library has received considerable attention. All serial publications have been kept up to date, a large number of valuable volumes have been bound, and the following new books, amongst others, added to the Library—viz., "Flore Forestière de la Cochinchine," "Silva of North America," "Orchids of South Africa," "Sowerby's English Botany" (thirty-sixty vols.), Trimen's "Handbook of the Flora of Ceylon," Humboldt and Bonpland's "Monographie des Melastomacées," "Bibliographical Index of British and Irish Botanists," "Index Kewensis" (parts 1 and 2), and many others.

The hearty thanks of the Society are due to the Chiswick Board and to all the members of the Standing Committees—viz., the Scientific, the Fruit and Vegetable, the Floral, the Orchid, and the Narcissus Committees, for the kind and patient attention which they have severally given to their departments; also to the exhibitors who have contributed to so great an extent to produce the valuable results of the various meetings.

The best thanks of the Society are due to all those who, either at home or abroad, have so kindly and liberally presented books to the Library or plants or seeds to the Gardens. A list of the donors has been prepared, and will be found in the Society's "Journal," vol. xvi., parts 2 and 3, 1894. The Council also wish to express, in their own name and in that of all Fellows of the Society, their great indebtedness to all who have so kindly contributed, either by the exhibition of plants, fruits, flowers, or vegetables, or by the reading of papers, to the success of the fortnightly meetings in the Drill Hall.

The papers read at these meetings, which have been published in the *Journal*, are as follows:—

Mar.	14	"Some Effects of Growing Plants under Glasses of Various Colours," The Rev. G. Henslow, M.A.
„	28	"Flowers of the French Riviera," Mons. H. De Vilmorin.
April	11	"The Antiquity of the Citron Tree in Egypt," Dr. E. Bonavia.
„	25	"Alpine Plants and their Treatment," Mons. H. Correvon.
May	9	"Chemical Determinations Concerning the Soil without the Aid of Chemistry," Professor F. Cheshire, F.L.S.
June	6	"Hardy Rhododendrons and Azaleas," Sir John T. D. Llewelyn, Bart.
„	20	"Rambles with a Trowel," Mr. H. Selfe Leonard.
July	25	"Alpine Houses and Plants," Mr. H. Selfe Leonard.
Aug.	8	"Cannas," Mr. J. G. Baker, F.L.S.
Sept.	12	"Garden Phloxes and Pentstemons," Mr. J. Douglas.
„	25	"Causes of Failure in Eucharis Culture," Mr. W. Iggulden.
Oct.	10	"Pears," Mr. W. Crump.
„	24	"Onions," Mr. A. Dean.
Nov.	14	"Chrysanthemums," Mr. R. Parker.
„	28	"Late-keeping Grapes," Mr. T. Crasp.

Besides the above, the second report of Dr. F. W. Oliver on the "Effects of Urban Fog on Cultivated Plants," is printed in full, and it is well worthy of being carefully read.

The Council have the sad duty of recording the death of forty-seven Fellows during the year, and amongst them they regret to find the names of the Earl of Lovelace, Lord Ebury, Lord Alfred Churchill, the Countess of Carberry, Lady Peto, Lord Calthorpe, Mr. Phippen, Mr.

Hugh Low, Mr. H. Deverill, Mr. T. Laxton, Mr. Bailey Denton, Mr. R. Bullen, Mr. H. G. Quilter, Mr. S. Barlow, &c.

A scheme for the affiliation of local horticultural societies was put forward in 1890, fifty-eight local societies have availed themselves of it. The Council express the hope that Fellows will promote the affiliation of local horticultural and cottage garden societies in their own immediate neighbourhood.

ANNUAL REVENUE AND EXPENDITURE ACCOUNT FOR THE YEAR ENDING 31st DECEMBER, 1893.

Dr.	£	s.	d.	£	s.	d.
To ESTABLISHMENT EXPENSES—						
Salaries and Wages	644	13	8			
Rent of Office	173	3	0			
Printing and Stationery	157	11	10			
Journal	418	16	6			
Other Publications	243	8	8			
Postage	78	15	0			
Coal, Gas and Water	5	18	9			
Donation to Auricula and Primula Society ...	10	0	0			
„ Carnation and Picotee Society ...	10	0	0			
„ National Rose Society (1892-3) ...	20	0	0			
Miscellaneous	82	18	0			
				1675	5	5
„ SHOWS AND MEETINGS—						
Rent of Drill Hall and Cleaning	97	19	0			
Temple Show	495	19	4			
Chiswick Local Show	120	15	0			
Agricultural Hall Show—Prizes, Medals, &c. ...	547	14	10			
Advertising	16	0	3			
Prizes and Medals	283	12	8			
Printing, &c.	4	12	6			
Labour	65	2	8			
Repairs to Tents	12	7	0			
Superintendent of Flower Shows	50	0	0			
				1691	3	3
„ CHISWICK GARDENS—						
Rent, Rates, Taxes, and Insurance	259	14	9			
Superintendent's Salary	225	0	0			
Labour	688	6	1			
Manure, Implements, &c.	161	13	5			
Coal and Coke	149	1	6			
Repairs	72	13	1			
Water and Gas	18	18	9			
Miscellaneous	49	2	6			
				1624	15	1
„ Balance to general revenue account				396	19	4
				£5591	3	1

Cr.	£	s.	d.	£	s.	d.
By ANNUAL SUBSCRIPTIONS... ..				3258	18	5
„ DONATIONS				24	1	0
„ TEMPLE SHOW	683	10	6			
„ CHISWICK LOCAL SHOW	111	11	7			
„ AGRICULTURAL HALL SHOW	540	0	0			
„ DRILL HALL MEETINGS	25	10	0			
				1360	12	1
„ ADVERTISEMENTS IN JOURNAL, &c. ...				220	18	2
„ SALE OF JOURNAL, &c.				133	4	6
„ DIVIDENDS—						
Davis Bequest and Parry's Legacy	56	13	4			
Consols, £500	13	5	0			
				70	3	4
Interest on Deposits				12	9	6
„ PRIZES AND MEDALS... ..				80	5	0
„ CHISWICK GARDENS—						
Produce sold	404	9	2			
Admissions	3	14	0			
Miscellaneous	22	7	11			
				430	11	1
				£5591	3	1

We have examined the above Accounts, and find the same correct.

(Signed) HARRY TURNER, }
HENRY WILLIAMS, } Auditors.
HARPER BROS., Chartered Accountants.

January 8th, 1894.

BALANCE SHEET, 31st DECEMBER, 1893.

	£	s.	d.	£	s.	d.
To SUNDRY CREDITORS... ..				111	14	9
„ Subscriptions, 1894, paid in advance				69	6	6
„ GENERAL REVENUE ACCOUNT—						
Balance, 1st January, 1893... ..	2190	14	1			
Less bad debts	2	4	6			
	2188	9	7			
Balance for the year 1893, as per revenue and expenditure account	396	19	4			
				2585	8	11
				£2766	10	2

We have examined the above accounts, and find the same correct.

(Signed) HARRY TURNER, }
HENRY WILLIAMS, } Auditors.
HARPER BROS., Chartered Accountants.

January 8th, 1894.

	£	s.	d.	£	s.	d.
By SUNDRY DEBTORS—						
Annual subscriptions outstanding, estimated at	10	0	0			
Garden produce... ..	28	7	11			
Advertisements in schedules	107	16	3			
				166	4	2
„ INVESTMENTS—						
2½ per cent. Consols, £2122 8s. 9d., cost ...	1892	11	3			
(£2022 8s. 9d. of this sum is held by the Society, subject to the provisions of the will of the late J. Davis, Esq.)						
2½ per cent. Consols £500, cost	479	8	0			
				2371	19	3
„ CASH AT LONDON AND COUNTY BANK—						
On current account	225	15	4			
„ CASH IN HAND	2	11	5			
				223	6	9
				£2766	10	2

middle of February onwards through March quite soon enough to propagate the varieties of the Queen family. Those persons who have not tried late rooting should do so this season, and I am sure they will not have cause to regret.—W. TUNNINGTON.

OLD AND NEW CHRYSANTHEMUMS.

It would no doubt interest many of your readers who may not have the means of reference, if you would publish, for comparison with the modern lists of Japanese Chrysanthemums, the varieties of ten years ago which comprised the winning stands of Mr. Molyneux at Kingston in the challenge cup class, Mr. Tunnington at Birmingham, and Mr. Leadbetter at Liverpool in November, 1883.

I append the names as copied from the *Journal of Horticulture* of that date. Mr. Molyneux's blooms were Madame Audiguier, Fair Maid of Guernsey, Dolores, Marguerite Marrouch, Meg Merrilies, M. Ardene, Peter the Great, Baronne de Prailly, Père Delaux, Criterion, Balmoreau, Soleil Levant, Khedive, Boule d'Or, Comte de Germiny, Elaine, Triomphe du Nord, Hiver Fleur, Grandiflora, Sarnia, Japonaise, R. Ballantine, Alba Plena, Thunberg. The others included Sarnia, Ethel, Oracle, Bismarck, L'Ardoise, Chang, La Nympe, Rosa Bonheur, Album Striatum, Patria, Mdle. Moulise, Flambeau, Delicata, Striatum, Magnum Bonum, L'Incomparable, Cry Kang, and the Cossack.

It will be seen from the above that out of forty-two of the leading



NATIONAL CHRYSANTHEMUM SOCIETY.

THE annual general meeting of the members of this Society will take place at Anderton's Hotel, Fleet Street, E.C., on Monday, February 19th, at 7 o'clock.

CHRYSANTHEMUM MRS. L. C. MADEIRA.

I QUITE agree with Mr. Wells (page 76). With me the half open flower showed a tendency to come deformed, but I took out a portion of the petals, and the flower finished perfectly. I think this variety will furnish an excellent back row flower; the colour is nearer Jardin des Plantes than any kind I know. The florets are narrow, but unfortunately we see this too often of late years. I attribute it to too early propagation in the incurved section. I know from experience that early rooting, and too early feeding, will not produce flowers of the Queen family with breadth of floret and substance. I consider that from the

varieties of that date only one (Boule d'Or) has any real standing with growers of to-day. Shall we ten years hence have to put aside the leading varieties of 1894? It seems hardly credible, but still possible, at the rate novelties are introduced.—W. H. LEES.

CHRYSANTHEMUMS IN NEW ZEALAND.

MOST of the readers of the Journal are aware of the interest that is now being taken in the Chrysanthemum in this Colony, and that seedlings are being raised there from seed saved by the colonial growers. Most of them prefer their own to the imported article. Plants of most of the new varieties grown here are regularly introduced into the Colony, but I did not know until the other day that any attempt had been made to secure plants from Japan. A correspondent, however, from Christchurch, relates in a recent letter that a gentleman residing in the neighbourhood has endeavoured to introduce a collection of twenty-eight varieties from Japan, but that they arrived, unfortunately, quite dead. A fortnight ago a well known grower called upon me and said he had received a consignment of new varieties from Wellington, N.Z., but with a like result. It is to be hoped that some means may be discovered by which Chrysanthemums can be sent such long distances to arrive in a tolerably healthy condition.—P.

CHRYSANTHEMUM MRS. A. HARDY.

THIS is a splendid variety and worthy of careful cultivation, but if the voters in the recent Chrysanthemum election had named it as one for beginners to grow they would have misled the public. It is a good sort to cultivate when its requirements are fairly well understood, but its treatment must differ somewhat from that of the general collection.

When recently residing in the immediate neighbourhood of Bournemouth I grew this variety fairly well. The first season I failed to make the plant grow and lost it, but I tried again, and during the following three seasons succeeded in obtaining blooms averaging 6 inches in diameter and 4 inches deep. The flowers were very sweet-scented, pure white, and covered with hairs.

My treatment was as follows. First I procured strong cuttings and inserted them in good loam and leaf soil in equal parts with an abundance of sand. The plants were grown with the general collection till the time of placing them out of doors, when this particular variety was taken into a cool greenhouse, and kept there during the remainder of the season. On April 1st the tops were taken off each plant, and two shoots from each grown. The first bud resulting from these was secured. This bud generally showed about August 10th. The same compost throughout was used; no manure or feeding in any form was given, only clear water.

I consider that the *Journal of Horticulture* has been the medium of giving new interest in the cultivation of the Chrysanthemum, and the thanks of many people will be accorded the Editor, Mr. Molyneux, and the able band of helpers.—GEO. GARNER.

THE JAPANESE CHRYSANTHEMUM ELECTION.

I THINK that it is difficult to over-estimate the value of the selections which have appeared in your columns, not only to the less experienced exhibitors, but, also, as Mr. C. Orchard (page 112) points out, to provincial growers and others who have not the opportunity of seeing the latest novelties when first brought out. Each year brings us, in ever-increasing numbers, new varieties, many of which are designed to supplant those now regarded as essential to the exhibitor. In what direction is he then to seek a reliable guide in the matter of selection? A very small experience must suffice to convey the conviction that the glowing trade descriptions must be received *cum grano salis*. No, these trade catalogues with their numberless "best varieties in existence," simply perplex and bewilder us. Then there is the certificate of the National Chrysanthemum Society. Can these certificates be accepted as a safe guide? Let the answer be supplied by an analysis of actual results. There were twenty-two Japanese varieties certificated in 1891. Of these eleven, or exactly half, did not receive more than one vote in Mr. Molyneux's list; and of this eleven no less than nine did not appear at all in the ninety-three varieties noticed. Taking 1892, there were twenty-seven certificated; or, to be strictly accurate, twenty-six, for the variety W. A. Manda appears to have so bewitched the Floral Committee, that if the official reports of the N.C.S. be accepted as correct, the Committee certificated it twice over; in 1891, and again in 1892. Well, of this twenty-six, no less than thirteen do not appear at all in the ninety-three, and two receive only a single vote: fifteen out of twenty-six. Again, taking both lists (Mr. Molyneux's and Mr. Mawley's) no less than twenty-one of the varieties certificated by the N.C.S. in 1891 and 1892 do not appear in either of them. That the explanation does not lie in the fact that the varieties in question have been but recently introduced is plain, for some of the very latest of them, W. Seward, R. Owen, and Miss Dorothea Shea, get into the final "twenty-four." Nor can it avail as a retort that the large majority, if not all of the "twenty-four" have been certificated, for the adverse suggestion arising from the above statistics is not that intrinsically good varieties are affected by the certificate, but that bad ones get it. The former would make their mark without it; the latter, with it, only serve to mislead the exhibitor. The experience of actual results proves, therefore, that if the exhibitor were to take the certificate of the N.C.S. as his guide he would but court disaster at the show table.

We have next Mr. Mawley's annual audit founded on the exhibits at the N.C.S.'s shows. These are very interesting historically, but they have two faults. Firstly, the audit is not confined to the winning stands, and secondly, the modification of the latest results by the adoption of a system of retrospective averages allows a variety which in

the past, for some special reason, had a certain value, long since lost, to retain a position in the list wholly at variance with its present value. For instance, M. Bernard, shown four times in 1893, is still kept as high as eleventh in the list, and Jeanne Delaux, shown nine times, eighteenth, both far in advance of W. Seward, Lord Brooke, and Miss Dorothea Shea, all in Mr. Molyneux's twenty-four, while it is needless to say that Jeanne Delaux does not appear in the ninety-three. R. Owen in the ideal twelve does not even appear in Mr. Mawley's sixty-two. Interesting, but insufficient as a guide for present day purposes, must be the verdict, and no comparative cheapness of cuttings can avail to bring adequate compensation to the exhibitor.

I think that the foregoing survey of the position of the exhibitor of to-day brings out most clearly the practical value of the selections



FIG. 21.—MUTISIA CLEMATIS.

compiled by Mr. Molyneux, and I venture to say that if these selections are continued annually, and are made as soon as conveniently practicable after the November shows, a standard of selection will be created which will be eagerly looked for, and accepted, by the entire Chrysanthemum exhibiting community.—AMATEUR.

MUTISIA CLEMATIS.

THIS is an ornamental plant, the long tubular bright red flower heads drooping from the slender climbing stems supported by neat pinnate and tendril-terminated leaves having a graceful appearance in suitable situations. It succeeds very well in a greenhouse trained to a pillar or short rafter, but the plant requires a position where it can be readily seen. It can be planted out or grown in pots, a compost of loam, peat, and sand suiting it well, with plenty of water when in growth, and a well marked period of rest subsequently. Fig. 21 represents a bloom of this beautiful, though seldom grown plant.



FRUIT FORCING.

Peaches and Nectarines.—*Earliest House.*—Where the shoots reserved at the base of the present bearing wood are sufficiently advanced they should be laid in, that is, tied down, so as to give them the desired inclination, taking care not to bring them too sharply toward the branches, nor endeavour to tie them until they are sufficiently grown to allow of the operation being performed without snapping off their points. The terminal growths of leading branches should be trained in their full length, pinching the laterals to one leaf as produced. Growths for furnishing branches also require to be trained in without stopping, tying and regulating them as they advance, in doing which leave plenty of room for the shoots swelling. In laying-in young growths from extensions, avoid overcrowding, allowing a distance of 12 to 15 inches between them along the branches, and about 6 inches between the shoots, so that the foliage will receive plenty of light and air. Those shoots retained to attract the sap to the fruit must be kept closely pinched to one leaf after they have previously been stopped at the third joint or the one with a good leaf.

Pay due attention to the border for watering. Do not be deceived by the syringing making the surface look wet whilst the soil beneath may be too dry; but make an examination every fortnight or three weeks, and supply water (or liquid manure to weakly trees) in a tepid state thoroughly whenever required. This is better than having stated times for watering, for needless supplies of water or liquid manure only tend to make the soil sodden and sour, and neglect of affording moisture at the roots retards growth, besides favouring attacks of red spider. This pest must be kept under by syringing the trees in the morning and afternoon. If this fails to subdue insect pests or if aphides appear, syringe the trees with a decoction of quassia chips, 4 ozs., boiled ten minutes in a gallon of water, in which the chips have been steeped overnight, dissolving 4 ozs. of softsoap in it as it cools, straining and diluting with hot water to 4 gallons, using when cooled to 90° to 100°. Should the growths be attacked by brown aphids, use the mixture at full strength, applying with a brush to the affected parts; in ten to fifteen minutes afterwards syringe the whole of the trees with the decoction of quassia chips and softsoap solution diluted to 4 gallons. Repeat as necessary for keeping the trees free from aphides, red spider, and thrips. It also has a deterrent effect on brown scale, preventing the young getting fixed on the tender growths. The temperature should be maintained at 60° to 65° by artificial means, a fall to 55° on cold mornings being much better for the trees than sharp firing, which only induces attenuated growths and favours insects.

Second Early House.—The trees will now require attention in dis-budding, doing it gradually, removing the strongest and ill-placed, retaining a good growth at the base of each current bearing branch, and a shoot on a level with or above the fruit. Thinning the fruits must also be attended to where too thick by first removing the smaller and those on the under side of the branches, but avoid wholesale thinning and disbudding, proceeding on the principle of a little and often. A temperature of 55° at night in cold weather, and a little warmer, or 60°, in mild, is suitable, but a comparatively low temperature at night is preferable to a high one, 65° by day, with an advance to 70° to 75° from sun heat, and free ventilation from 65°. Syringing the trees must be practised morning and afternoon, except when the weather is dull; then an occasional syringing and damping of available surfaces in the morning and early afternoon will be sufficient.

Third Succession House.—Trees started early in the month are in blossom, and must have attention when fully expanded and the pollen is ripe in fertilising the flowers by shaking the trees, or dusting with a rabbit's tail mounted on a small stick, or a camel's-hair brush. Cease syringing the trees directly the anthers show clear of the corolla, but sprinkle the floor and border every morning and afternoon when bright, occasionally only when dull. Avoid cold currents of air, yet ventilate early and freely on all favourable opportunities. Maintain a temperature of 50° at night, 55° by day artificially, advancing to 65° or more with sun, but not without full ventilation. Leave a little ventilation constantly at the top of the house, and enlarge the opening on dull days so as to ensure a change of air, keeping the atmosphere buoyant, for a stagnant condition of the air of the house is fatal to a good set of fruit.

Houses to Afford Fruit in July or Early August.—The trees for this purpose should be started early in March; those previously forced will start naturally at the usual time, so that there is no need to close the house to accelerate the swelling of the buds; in fact, they are, if anything, too forward, and will require air fully day and night, except when frost prevails, to prevent their being brought on too rapidly. Nothing, however, is gained by striving to retard the trees at the blossoming stage, but everything may be lost as regards a crop by failing to accord the conditions essential to a good set of fruit. The trees may be syringed every day twice until the blossom buds show colour, when it is better to cease sprinkling them, as the anthers soon appear, and they require a moderate degree of moisture only for their proper development. A temperature of 50° by day, advancing to 65° with

abundant ventilation, and 40° to 45° at night, will be all that is needed to insure a good set of fruit, provided enough air is given to prevent the atmosphere becoming stagnant. Examine the border, and if dry afford a thorough supply of water. If there be a plentiful show of blossom remove those on the under side or at the back of the trellis by drawing the hand the reverse way of the growth.

Late Houses.—The buds in these are much too forward, especially in houses where the roof lights are fixed, there being quite a fortnight difference between them and those which have been exposed since the fall of the leaf. All pruning and readjustment of the trees on the trellises must be completed without delay. Where the lights are off they need not be replaced until the buds show colour. In other cases ventilate freely, merely excluding frost after the blossom is advanced in showing colour. Unheated houses are not advisable, especially in cold localities; fixed roof lights are a still greater mistake, as the blossoms come on too rapidly in seasons like this, and they often have to struggle with a close, moist, cold atmosphere when they should be setting. Gentle heat during flowering does much towards insuring a good set, and in late summer artificial heat ripens the fruit and wood. Examine the borders, making sure that there is no lack of moisture. If the soil has left the walls loosen it with a fork, and close the interstices so as to make the water pass through all parts of the borders, and thoroughly moisten them from the surface right through to the drainage.

THE KITCHEN GARDEN.

Early Peas.—The earliest crops are to be obtained by raising the plants under glass, and before they are badly matted together at the roots plant them in rows outdoors. Such excellent dwarf varieties as Chelsea Gem and English Wonder are among the best that can be selected for warm borders, a quart of seed giving enough plants for short rows across a border, equal to a length of 36 yards. If space under glass can be afforded, also sow another quart of either Exonian, William I., or other good medium height early Peas for transplanting to a sunny open breadth of ground. There is no necessity to hother with either troughs, turves, or small pots; Peas, if the operation is not too long delayed, transplanting readily enough when raised in ordinary Pelargonium boxes and shaken clear of the soil. Sow seed at once and place in gentle heat to germinate.

Sowing Peas in the Open.—As early in February as the ground can be got into good working condition good round-seeded varieties may be sown. It is a mistake to sow the seed at any fixed date, as it is liable to perish, or germinate very indifferently if surrounded by saturated, pasty, or lumpy soil. Especially is it unwise to sow the wrinkled seeded varieties much before the first week in March, these being particularly liable to decay in the ground. Rows that are to be staked should be disposed as far asunder as the known height of the variety sown. Thus, William I. should be not less than 42 inches apart, 3 feet being sufficient for Exonian, and 20 inches for the dwarf Chelsea Gem and English Wonder.

All would succeed equally well without stakes, and in this case the rows may be 2 feet asunder. Open fairly wide flat-bottomed drills, these being 6 inches wide and 2 inches below the ordinary ground level. If the ground is very lumpy, and there has not been much frost to pulverise it, form deeper drills, and place some fine soil from the frame ground in the bottom, also covering the seed with more of the same. Early Peas may be sown rather thickly, 1 quart being enough for a length of 30 yards. Narrower drills may be drawn where the rows are not to be staked, and the seed sown more thinly.

Mice and Pea Seed.—Field mice or voles are unusually troublesome this winter, and are likely to be where their natural enemies, including cats, are killed down by gamekeepers. If a good cat or cats can be kept in a garden and not given meat of any kind these prevent much worry. Unless mice are kept down they trace out the rows of Peas and spoil them in a few nights. Figure of 4 traps, baited with peas, if persevered with, will clear off a number of mice, but other traps and bait are of little avail. Unless extra numerous and hard driven mice will not interfere with seed well coated with red lead prior to sowing. First damp the seed and then roll it in powdered red lead till thoroughly covered with it. The red lead will not injure the Peas, and though said to be tasteless, the mice seem to realise it is poisonous. Soaking the seed for a short time in petroleum will not injure it, nor will it render it mice-proof.

Broad Beans.—If desired, extra early seed may be sown singly in 2½-inch pots in gentle heat as advised in the case of early Peas, the plants being duly hardened off and turned out into the open. Seed of Beck's Dwarf Green Gem, Early Longpod, or other favourite early varieties may also be sown in the open directly the ground can be got into suitable condition. They may be either sown in single lines or drills 2 feet asunder, or in double drills 6 inches apart, with 3 feet intervals. If preferred the seed may be dibbled in, and in either case dispose it about 4 inches asunder and 2 inches deep. Any sunny open spot that has been well manured and deeply dug ought to be good enough for Broad Beans, reserving the more sheltered sunny borders for choicer kinds of vegetables.

Spinach.—January frosts had no appreciable ill effects on the autumn-raised crops, and these are doing good service. A surfacing of soot, or some other quick-acting nitrogenous manure, sown very carefully between the rows so as not to touch the leaves, and then stirred in with a hoe, would not be wasted on this important crop. More seed should also be sown at the same time as and with early Peas, shallow drills being drawn midway between the rows of the latter. Victoria is

a fine form of Spinach, and does not run to seed so quickly as the ordinary summer or round-seeded variety.

Parsnips.—If extra fine roots of these are desired seed may well be sown directly the ground can be got into a finely divided state; but for ordinary purposes smaller roots, or any that can be cooked whole, are to be preferred, and these can be most surely had by sowing a month or six weeks hence. Those persons who are anxious to grow long, straight, clean roots for exhibition must avoid sowing seed on badly saturated ground, or on a site where there is any solid manure, not buried deeply, either condition causing the tap roots to fork badly. If the ground was well manured and trenched for a previous crop of Cauliflowers, Peas, Beans, and such like, it only need be dug and well worked to grow Parsnips to a great size and clean. Sow the seed thinly in shallow drills 18 inches asunder, a distance of 15 inches being enough for later sowings.

Garlic, Shallots, and Parsley.—A border alongside a walk might be very profitably utilised for these crops. It should not be very poor, and ought at the present time to be in a free working condition, an early opportunity being taken of planting out roots of the two former. If wanted large or of a size equal to winning prizes, plant single divisions or "cloves," the larger roots splitting up during the growing season. Prior to planting make the ground somewhat firm, and stir in soot freely. Draw drills 1 foot asunder, and plant the roots or divisions in these 6 inches or rather more apart. The Garlic should be buried so as to only just show through the surface, but the Shallots ought to be only half buried, taking care to fix them well. Midway between these rows Parsley may be planted, and the Garlic and Shallots will be off the ground long before the latter requires much room. It is the surest way of having a fine even bed of Parsley, and the requisite number of plants should be raised in a box or boxes in heat, or in a frame as advised on page 60 of the *Journal of Horticulture* for January 18th.

Early Celery.—If extra early Celery is wanted, whether for exhibition or home consumption, no time should be lost before sowing seed. Give the preference to a white variety, as coloured varieties are slower in blanching. Sow the seed in a pan, and place in a brisk moist heat to germinate. Never depend upon old seed.

Large Onions and Leeks.—These, again, are sometimes wanted early, and in order to be certain of them plants must be raised under glass. Sow the seed of selected forms in pans or boxes, and place in a brisk heat to germinate, shifting to cooler and lighter quarters before the plants become drawn and weakly. If the Onions are raised somewhat thinly they may be transplanted direct from the seed pans or boxes into the open ground, but Leeks will require to be treated more as Celery is prepared for the open.

THE BEE-KEEPER.

APIARIAN NOTES.

SHORT STORES.

FROM many parts of the kingdom it is reported that hives are wonderfully light although they were heavy in the autumn. These reports simply corroborate what I predicted in November, and experienced in December. Since the end of October and beginning of November we have been much on the move, and breeding has been more rapid than some imagine. Stores, consequently, soon diminish, and if not replenished immediately such hives will either die or become unprofitable.

Feeding may be resorted to at any time now, but always better after the bees have had a good flight. I prefer syrup made from the best cane sugar, dissolved in about its own weight of soft or rain water, fed from beneath in wire-cloth-covered scoops. After numerous careful experiments relative to food and feeding, I have found nothing better than the above method and formula. Hives carefully and properly prepared ought not to have their crowns disturbed. It takes but little to create a draught and to cool the brood chamber; we therefore cannot be too careful in maintaining the essential warmth that is so necessary to the well being of the hive, and which feeding from above more or less partly destroys.

Loss of bees has gone on simultaneously with the decrease in weight, and the worst time of the year has not come yet. Bee-keepers should therefore exercise the greatest care not to encourage the mortality nor decrease of breeding. To avoid this condition feed liberally and as speedily as possible, then leave the bees alone. If pollen is plentiful, within a safe and short distance of the hives, they will find and improve upon it; but if it is not, supply them with plenty of pea meal in suitable receptacles and places, or mixed with honey to a creamy paste, in scoops similar to those used for syrup.

Owing to the stormy weather prevailing at the time of writing my bees are not getting the advantage of the flowers now expanded. They are to all appearance in a thriving condition, showing no signs of weakness. I have only one hive showing dead bees on the

floor. In this case it appears to be from the disease I termed chloric dropsical fever. The hive was twice capsized by accidentally running a barrow against it, but without any apparent injury. It, along with several others supposed to be short of stores, was fed about the middle of January. No dead bees were observed until the beginning of February, when in twenty-four hours 2000 or more were lying dead on the floor. This is the first case I have experienced for nearly twenty years, the previous instance being in pure Italian stocks during the summer and autumn only. The hive now referred to is composed of Punic crossed with Carniolans, and the misfortune occurring in winter it causes me to take more interest in the matter.

The symptoms are the same as affected the Italians. A few shiny bees divested of their pubescence, are first observed, their abdomens distended, being filled with a saltish greenish or orange coloured fluid. The bees upon the combs show evident signs of suffering, being listless and unable to fly; their wings fluttering are the greatest signs of life. The healthy bees are often near the entrance, and the whole hive is greatly above the normal temperature. Hitherto all other cases were hereditary, so that any hive affected never survived, and when the queen was transferred to another hive the progeny became diseased. Sometimes on removing the queen, and substituting another, the hive prospered, i.e., if the bees were not too much affected. When once they become paralyzed there is no hope for them.—A LANARKSHIRE BEE KEEPER.

TO CORRESPONDENTS

* * All correspondence should be directed either to "THE EDITOR" or to "THE PUBLISHER." Letters addressed to Dr. Hogg or members of the staff often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post, and we do not undertake to return rejected communications.

Odontoglossum Rossi (*Reader*).—There are several fine varieties of this Orchid in cultivation. *O. Rossi majus* produces flowers much larger than the type, and this is probably the kind you possess.

Book (*R. C.*).—We do not remember a book specially devoted to the flower you name, but if we remember rightly it is treated with other flowers by the Rev. F. D. Horner, a master in the art of cultivation and description.

Sweet Peas as Shelter (*Dahlia Lover*).—We see no objection to your growing a row of Sweet Peas around your Dahlia bed for sheltering the plants, provided there is no encroachment on them by the Peas. The present is a good time for sowing.

Roman Hyacinths Failing (*T. N.*).—It is almost impossible to maintain the necessary uniformity of moisture when the pots are stood in a dry room, even if examined every week to see if water is needed. The soil has been much too dry. Had the soil been moderately moist when used, and the pots buried in damp cocoa-nut fibre refuse, sweet ashes, or leaf mould in the open garden you would have had no such failure to record as is the case now; but on the contrary, well rooted plants and good spikes of the coveted flowers.

Adiantum farleyense (*D. C.*).—It is not unusual for the old fronds of this beautiful Fern to wither at this season of the year; indeed, a number of them usually decay when fresh fronds are being produced. Remove the withered portions and repot the plant if it needs repotting, otherwise top-dress by removing as much soil as you can with a pointed stick and adding fresh compost, equal parts of turfy loam and peat with broken charcoal being suitable. Maintain a moist genial atmosphere, and shade the plant by placing a piece of newspaper above it during sunny days. By pursuing this system of management, and applying water judiciously, your plant will soon be as attractive as ever. See that the drainage is efficient, as if the soil is sour the plant cannot thrive.

Old Plants of Deutzia gracilis (*Reader*).—It is not unusual for old plants to become stunted in growth. Such plants do not usually divide readily, and they are of no use, even if they can be split up into a number of plants, unless the divisions are cut down to within a few inches of the soil, to cause them to push vigorously from the base and make a good growth. If they do this, and the stems are well ripened, the plants will produce flowers from almost every bud. This practice may be adopted, or the old plants cut hard back, and after

they have made a little growth in heat, potted, and reducing the ball about one-third, continuing in heat until the growth is completed and the wood firm, then place outdoors in a sunny position to harden and ripen the growths.

Compost for Malmaison Carnations (G. H.).—The exact proportions of the various ingredients used to form a suitable compost for these popular flowers must vary according to the character of the loam. If this is of medium texture containing a fair amount of fibre, incorporate with three parts of it one part of leaf soil sifted through the half-inch sieve, one part manure from a spent Mushroom bed, also sifted, one part burnt refuse with plenty of sharp sand and a little soot added. Should the loam be heavy, an extra part of leaf soil and a little pounded charcoal ought to be added. If, on the other hand, the loam is very light, dispense with the burnt refuse and use but little sand. With moderately firm potting and good culture in other respects, you may confidently anticipate satisfactory results.

Pruning Banksian Rose (Subscriber).—This Rose does not flower freely in a clay soil unless the plant has a very warm position. The flowers are produced on small hard twiggy growths that should not be shortened. Close pruning is unsuitable, neither will the strong growths to which you allude produce flowers at all freely, although a few may be borne towards the end of the shoots. Such gross growths ought to be removed towards the end of summer so as to admit the sun and air to the smaller shoots, and these, if matured and not shortened, will produce flowers. Without knowing the condition of your plant we are unable to say what course you should pursue now; but as we have stated the conditions essential for success you will be able to so prune and train the plant as to induce it to flower if the position and district are favourable for this Rose. What you must seek to obtain is a number of rather weak growths, and these must be matured by full exposure to the sun.

Daphne indica Unhealthy (F. D.).—Your plant appears to be in a very bad state, and careful attention will be needed to restore its lost vigour. Its root-action is defective, but whether the soil is unsuitable, or whether the plant is root-bound and has been starved by want of water, we have no means of knowing. Either extreme—that is, a soddened soil causing the roots to decay, or drought at times causing them to shrivel, would have similar results—a comparatively leafless and sickly plant. Turn the plant out of its pot and remove any inert soil, even reducing the ball to half its bulk, and place in a clean well-drained pot just large enough for holding the roots conveniently. Employ a compost of sweet turfy loam, adding a little leaf soil, about a fourth, and a free admixture of silver sand; work the soil well amongst the roots and press it rather firmly. Apply water sparingly at first, only giving it when the soil appears dry, and then in sufficient quantity to penetrate the entire mass. Place the plant at the warm end of a greenhouse, and syringe it occasionally during fine weather, and it will perhaps recover.

Hibiscus Cooperi (G. W.).—A compost of about equal parts turfy loam and peat, with a liberal proportion of sand, will suit the plant well if the drainage is carefully attended to. Select a light and not too warm position in the stove for the specimen, and with ordinary care in the supply of water and keeping the plant clean—scale and mealy bug being its chief enemies—little difficulty will be experienced in having it healthy, with the leaves brightly coloured. The Maranta will succeed under similar treatment, but a slightly higher temperature is preferable, employing shallow pans or thoroughly drained pots, as any superfluous moisture in the soil is injurious. Rather less loam is needed in the compost than that recommended for the Hibiscus. The Caladiums may be started at once, employing a compost of loam, peat, or leaf soil, well decomposed manure, and plenty of sand. The loam and peat should be broken up roughly, but all should be as well mixed as possible. As growth advances liberal supplies of water will be needed, with frequent syringings until the leaves are well developed. A light position in a stove improves the colour of the foliage very much, and it is well to have the plants as near the glass as is convenient, or they become drawn and weak.

Growing Seakale Plants for Forcing (J. E.).—The best plan is to plant young, healthy, stout portions of the roots, cut into lengths of about 6 inches in the autumn, pack them in light soil, protect from severe frost, and insert them firmly in rich light soil in an open situation in spring 12 to 15 inches apart in rows 18 inches asunder, with the upper part of the cuttings just level with or slightly below the surface. When growths push reduce their number to one, the strongest, rubbing the others off. If the ground is in good condition and kept free from weeds the plants will form good crowns by the autumn for forcing. If the roots are weak and old they may not form crowns sufficiently large and ripened for forcing the first year, then they should be allowed to remain another year, cutting off the tips to prevent their flowering, and reducing the number of shoots to one or two on each plant. Young plants, about half to three-quarters of an inch in diameter, should be shortened to 6 inches in length, have the crown cut off before planting, and the shoots which issue reduced to one or two on each plant when sufficiently advanced for the purpose. If the plants are strong and the soil rich and deep, allow a distance of 2 feet between the rows, and place the plants 15 or 18 inches apart in the rows. This will result in plants with large, well-developed crowns, which are essential for early forcing; in fact, for producing stout growths at any time. The method of preparing root cuttings is illustrated in Wright's shilling *Primer on Horticulture* (Macmillan), and can be ordered through a bookseller.

Names of Fruits.—Notice.—We have pleasure in naming good typical fruits (when the names are discoverable) for the convenience of regular subscribers, who are the growers of such fruit, and not col-

lectors of specimens from non-subscribers. This latter procedure is wholly irregular, and we trust that none of our readers will allow themselves to be made the mediums in infringing our rules. Special attention is directed to the following decision, the object of which is to discourage the growth of inferior and promote the culture of superior varieties. *In consequence of the large number of worthless Apples and Pears sent to this office to be named, it has been decided to name only specimens and varieties of approved merit, and to reject the inferior, which are not worth sending or growing.* The names and addresses of senders of fruit to be named must in all cases be enclosed with the specimens, whether letters referring to the fruit are sent by post or not. The names are not necessarily required for publication, initials sufficing for that. Only six specimens can be named at once, and any beyond that number cannot be preserved. *They should be sent on the first indication of change towards ripening. Dessert Pears cannot be named in a hard green state.* (J. J. D.).—1, Cox's Pomona; 2, Waltham Abbey Seedling; 3, Reinette de Canada; 4, Fearn's Pippin; 5, Court Pendu Plat; 6, Wormsley Pippin.

Names of Plants.—We only undertake to name species of plants, not varieties that have originated from seed and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in firm boxes. Slightly damp moss, soft green grass or leaves form the best packing, dry wool the worst. Not more than six specimens can be named at once, and the numbers should be visible without untying the ligatures, it being often difficult to separate them when the paper is damp. (A. P.).—1, Adiantum farleyense; 2, A. gracillimum. (W. G.).—1, Cypripedium concolor-Lawre; 2, C. insigne. (L. D.).—Maranta Veitchi. (J. J. D.).—1, Linum flavum; 2, Sparmannia africana; 3, Lonicera fragrantissima.

TRADE CATALOGUES RECEIVED.

Sutton & Sons, Reading.—*Farmers' Year Book and Graziers' Manual.*
Webb & Sons, Wordsley, Stourbridge.—*Farm Seeds.*
W. K. Woodcock, Syston, Leicester.—*Chrysanthemums.*
Wrinch & Sons, Ipswich.—*Catalogue of Glass Houses.*

COVENT GARDEN MARKET.—FEBRUARY 14TH.

MARKET quiet, with supplies falling off considerably.

FRUIT.

			s.	d.	s.	d.				s.	d.	s.	d.		
Apples, per bushel	2	6	to	9	0	Peaches, per doz.	..	..	0	0	to	0	0
Cobs	40	0	to	42	6	Plums, per half sieve	..	..	0	0	to	0	0
Grapes per lb.	1	0	to	2	6	St. Michael Pines, each	..	..	2	0	to	6	0
Lemons, case	10	0	to	15	0								

VEGETABLES.

	s.	d.	s.	d.		s.	d.	s.	d.		
Beans, Kidney, per lb. ..	0	6	to	1	0	Mustard and Cress, punnet	0	2	to	0	0
Beet, Red, dozen	1	0	0	0	0	Onions, bushel	3	6	4	0	
Carrots, bunch	0	3	0	4		Parsley, dozen bunches ..	2	0	3	0	
Canliflowers, dozen	2	0	4	0		Parsnips, dozen	1	0	0	0	
Celery, bundle	1	0	1	3		Potatoes, per cwt.	2	0	4	0	
Coleworts, dozen bunches	2	0	4	0		Salsafy, bundle	1	0	1	5	
Oncnmburs, dozen	2	0	5	0		Scorzonera, bundle	1	6	0	0	
Endive, dozen	1	3	1	6		Seakale, per basket	1	3	1	6	
Herbs, bunch	0	3	0	0		Shallots, per lb.	0	3	0	0	
Leeks, bunch	0	2	0	0		Spinach, bushel	1	6	3	0	
Lettuce, dozen	0	9	1	0		Tomatoes, per lb.	0	6	0	9	
Mushrooms, punnet	0	9	1	0		Turnips, bunch	0	3	0	0	

AVERAGE WHOLESALE PRICES.—OUT FLOWERS.

Orchid Blooms in variety.

	s.	d.	s.	d.		s.	d.	s.	d.	
Arm Lilies, 12 blooms ..	2	0	to	4	0	Orchids, per dozen blooms	3	0	to 12	0
Azalea, dozen sprays ..	0	6	1	0	Pelargoniums, 12 bunches	6	0	12	0	
Bonvardias, bunch ..	0	6	1	0	Pelargoniums, scarlet, doz.					
Camellias, dozen blooms ..	0	9	2	0	bunches	4	0	9	0	
Carnations, 12 blooms ..	2	0	4	0	Poinsettia, doz. blooms ..	3	0	4	0	
Chrysanthemms, dozen					Primula (double), dozen					
bunches	4	0	12	0	sprays	0	6	1	0	
Encharis, dozen	3	0	4	0	Pyrethrum, dozen bunches	2	0	4	0	
Gardenias, per dozen ..	6	0	12	0	Roses (indoor), dozen ..	1	0	2	0	
Hyacinths, dozen spikes ..	2	0	4	0	„ Tea, white, dozen ..	1	0	3	0	
Hyacinth, Roman, dozen					„ Yellow, dozen	2	0	4	0	
sprays	0	6	0	9	Roses, Safrano (French),					
Lilae (French) per bunch	3	6	6	0	per dozen	1	6	3	0	
Lilies of the Valley, dozen					Roses, Safrano (English),					
sprays	0	6	1	0	per dozen	2	0	3	0	
Lilium longiflorum, per					Roses, Maréchal Neil, per					
dozen	6	0	12	0	dozen	3	0	6	0	
Maidenhair Fern, dozen					Tuberose, 12 blooms ..	0	6	1	0	
bunches	4	0	6	0	Tulips, dozen blooms ..	0	6	1	6	
Marguerites, 12 bunches ..	2	0	4	0	Violets, Parme (French),					
Mignonette, 12 bunches ..	3	0	6	0	per bunch	2	0	3	6	
Narciss, Yellow (French),					Violets, Czar (French), per					
dozen bunches	1	6	2	6	bunch	2	0	2	6	
Narciss, White (French),					Violets (English), dozen					
dozen bunches	3	0	5	0	bunches	1	0	2	0	

PLANTS IN POTS.

	s.	d.	s.	d.		s.	d.	s.	d.		
Arbor Vitæ (golden) dozen	6	0	to	12	0	Fiens elastica, each	1	0	to	7	6
Arum Lilies, per dozen ..	6	0	to	12	0	Foliage plants, var., each..	2	0	to	10	0
Aspidistra, per dozen ..	18	0	to	36	0	Genista, per dozen	12	0	to	18	0
Aspidistra, specimen plant	5	0	to	10	6	Hyacinths, per dozen ..	5	0	to	9	6
Azaleas, per dozen ..	24	0	to	42	0	Lilium Harrissi, per dozen	12	0	to	24	0
Cineraria, per dozen ..	6	0	to	12	0	Lycopodiums, per dozen ..	3	0	to	4	0
Cyclamen, per dozen ..	9	0	to	18	0	Marguerite Daisy, dozen ..	6	0	to	12	0
Dracæna terminalis, per						Mignonette, per doz... ..	6	0	to	9	0
dozen.. ..	18	0	to	42	0	Myrtles, dozen	6	0	to	9	0
Dracæna viridis, dozen ..	9	0	to	24	0	Palms, in var., each	1	0	to	15	0
Ericas, per dozen ..	9	0	to	24	0	„ (specimens)	21	0	to	63	0
Enonymus, var., dozen ..	6	0	to	18	0	Poinsettia, per dozen.. ..	12	0	to	15	0
Evergreens, in var., dozen	6	0	to	24	0	Solanums, per dozen.. ..	9	0	to	12	0
Ferns, in variety, dozen ..	4	0	to	18	0	Tulips, per dozen	6	0	to	9	0
Ferns (small) per hundred	4	0	to	8	0						



NITROGENOUS MANURES.

"Is there any need for nitrate of soda on soil in good cultivation, containing a plentiful supply of manure and a fair amount of lime?" To this question of a correspondent we answered, "Probably not," but we could not be positive without knowing all about when and what manure had been used. As spring is drawing near attention may usefully be called to the true value of nitrates in relation to other manure.

If the abundance of manure mentioned by our correspondent as being present in the soil consists of decaying vegetable matter or of mineral manure, or if the soil last autumn was rich in phosphates and potash, much good would follow a spring dressing of from 1 to 2 cwt. of nitrate of soda per acre. We may safely go further and say that, bearing in mind the certainty of a loss of nitrogen in the drainage during winter, a moderate dressing of nitrate of soda in spring would make good such loss and ensure full vigour of growth; without it growth would probably be below par and the crop less abundant than it ought to be. There is nothing among manures so valuable as nitrate of soda if only it is used in the right way and at the right time. It has rightly been termed the golden key which unlocks the treasures of the soil. Without it growth is slow and feeble; with it growth is sturdy, robust and rapid. At its present price in dock of £9 10s. per ton it would cost about 12s. per cwt. on the land, and such an outlay per acre would prove a profitable investment for almost all fodder or corn crops. Try it! it is certain to repay you for the outlay by greater bulk of crop, and to give a feeling of confidence in its use which can only be had by practice.

For spring corn it has long been our practice to mix it with mineral manures and drill it with the seed. For Wheat, Winter Oats and Rye it answers best as a top-dressing at the end of February, or even at the beginning of the month for Rye in so mild a winter as this. Use it with confidence, watch results closely, and from knowledge so gained it will become increasingly useful year by year. It is undoubtedly a stimulant, but it never can become a scourger of soil rich in humus or in phosphoric acid and potash. With mineral superphosphate at its present price of £2 15s. per ton, and potash also very cheap, we ought to be able to maintain the balance of fertility in soil. Basic slag is in such high demand just now that there has been some difficulty in keeping pace with consumers' requirements. For spring use we prefer superphosphate, but there is something more to learn about the comparative value of these two kinds of phosphatic manure. With us the slag is on trial, and we hope to be able to offer a reliable report this season. Meanwhile, whatever kind of manure may have been used, nitrate of soda may follow as a top-dressing with advantage.

Take for example permanent pasture, Clover, seeds, Rye Grass, Lucerne, and Sainfoin. If any such fodder crops had a dressing of farmyard manure last autumn, a top-dressing of nitrate of soda now would set growth going with marvellous rapidity, and would much increase bulk of crop. So, too, if showery weather sets in immediately after first cut of such crops is taken, a second dressing of the nitrate would again prove profitable. It may also often play an important part on permanent pasture, apart from the spring dressing, if its use is well timed in showery weather. After haymaking it may add much to the free growth of aftermath. In a long

drought, with a supply of it at hand, advantage may be taken of a few brief showers of rain to give a dressing of it. We know it was so used with common salt last summer—about one part of nitrate to two of salt—when a showery day or two occurred in the midst of the drought. The salts were dissolved and sufficiently washed into the soil to reach enough of the roots to induce a growth of herbage of the highest value. Another crop for which it may be now used is Winter Tares. We do not forget that Tares and all other pod-bearers take nitrogen from the air, but we have proved to our own satisfaction that to have a full, strong, early growth some nitrate of soda must be used. In Peas this is especially remarkable, and we may venture to say that with judgment and care our king of manures may be applied beneficially to all green crops, and that when used intelligently its purchase is one of the best investments a farmer can make.

WORK ON THE HOME FARM.

Though there has been some stormy weather, it has, on the whole, been favourable for early lambs, of which the yield is about up to the average. The flock is now folded on Swedes, which have plenty of green tops for the lambs to eat as they run forward. The lambs also have what mixed lamb food they can clear up, and the ewes a pint of crushed oats daily. The ewes have plenty of milk, the lambs are strong, and there is a fair proportion of twins. Hoggets have been cleared off at rather better prices than last season; draft ewes, too, that were put into folds on upland grass in the autumn have been sold gradually as they become fit for the butcher. Much good work has again been done by folding them on grass. No other manure is required this season, but though there is clear evidence of a residue of fertility in the soil in the second year, it is insufficient to afford a full crop of herbage. An annual dressing of manure is therefore necessary for pasture every year.

Cows are now calving, and care of the calves brings its own reward. Sorry indeed are we to find how necessary it is to insist upon plenty of dry bedding for calves; yet again and again do we find them in filthy pens, where there is no clean place even on the floor for them to lie down upon. Such slovenly practice inevitably leads to losses from disease. Just so is it with swine: there can be no doubt that swine fever is caused by the filthy condition in which they are so frequently kept. Keep calves dry above and below—under a sound roof, in clean bedding, and where there are no cold cutting draughts. Feed them well, not twice, but at least three times daily. Thicken the milk gradually with linseed meal, and let condition and progress be your guide in feeding. Resolve to keep them in a fresh healthy condition. Much better is it to sell them than to suffer them to fall off in condition, or to be turned out exposed to wet, cold, and hunger. If this important part of live stock management had attention, and due heed was also given to judicious selection and breeding, there would soon be a marked improvement in our cattle, which would become proportionately more profitable.

METEOROLOGICAL OBSERVATIONS.

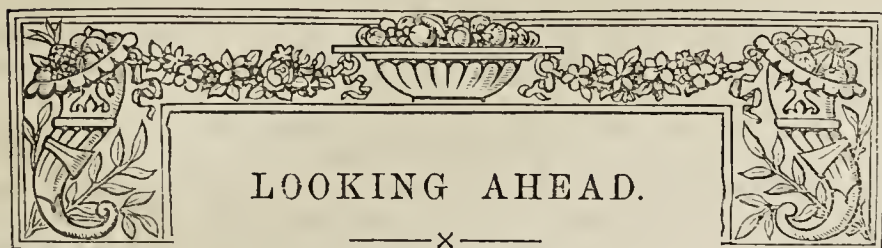
CAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude, 111 feet

DATE.		9 A.M.					IN THE DAY.				Rain.
1894. February.		Barometer at 32°, and Sea Level.	Hygrometer.		Direction of Wind.	Temp. of soil at 1 foot.	Shade Tem- perature.		Radiation Temperature		
			Dry.	Wet.			Max.	Min.	In Sun.	On Grass.	
		Inchs.	deg.	deg.		deg.	deg.	deg.	deg.	Inchs.	
Sunday ..	4	30.484	37.6	37.1	W.	41.3	49.3	34.6	64.8	29.1	0.030
Monday ..	5	30.419	47.2	47.1	N.	41.6	48.7	36.9	52.3	34.0	0.249
Tuesday ..	6	30.254	45.0	44.1	S.	42.0	53.9	39.4	56.9	33.4	—
Wednesday ..	7	29.947	53.6	50.2	W.	43.0	56.4	45.0	70.3	43.9	0.047
Thursday Feb.	8	30.230	45.0	40.8	W.	44.1	49.7	44.0	79.9	37.4	—
Friday ..	9	29.948	45.6	44.0	S.W.	43.1	52.9	38.0	65.7	31.9	0.028
Saturday ..	10	29.782	44.2	41.2	W.	42.9	51.7	40.2	72.2	34.4	—
		30.152	45.5	43.5		42.6	51.8	39.7	66.0	34.9	0.354

REMARKS.

- 4th.—Fine, with a good deal of sunshine in morning; a little drizzle between 5 and 6 P.M.; fair evening.
 5th.—Almost continuous drizzle till 3 P.M.; steady rain from 3 P.M. to 7 P.M.
 6th.—Overcast throughout; gale at night.
 7th.—Gale all day, and generally overcast, but occasional gleams of sun after 11 A.M.; drizzle in evening, and rain at night.
 8th.—Bright sunshine from sunrise to sunset; fine night.
 9th.—Fine morning, with a little sunshine about 11 A.M.; drizzle and slight showers in afternoon; fine night.
 10th.—Fine, with frequent sunshine.
 Another warm week, and a very windy one.—G. J. SYMONS.



AT the various stages of our fleeting lives it becomes us as units in the vast brotherhood of a world-wide empire to cast our thoughts onward from the present times to the uncertainties and possibilities of the future. This habit of reflection when once acquired will enable us to take a far greater interest in passing events, and will not unfrequently, by showing us the true connection between cause and effect, lead us to anticipate the course of future occurrences, which to the unthinking may come as a startling surprise. So, too, in the pursuit of our calling it behoves us to take a wide survey of the present requirements and probable future needs of the charge committed to our care.

Thinking only of present circumstances and providing for nothing behind the immediate future, have in innumerable instances been fatal to the best interests of many a gardener; while on the other hand a firm grasp of coming possibilities and a sustained effort to provide for contingencies have often led to advancement, fairly won against no common odds. Those who regard the pursuit of horticulture as a calling in the light of a pleasurable existence, demanding no great physical effort or intellectual power, are not likely to make much progress in these competitive days, when perhaps the sweeping doctrine of the "survival of the fittest" is proving more than ever its truth and strength. The sooner we make up our minds that we are engaged in a complicated avocation which requires our best efforts in both thought and action the better and greater will be our success in the future.

As I look around me during my limited travels in various parts of the country I am greatly astonished by the rapid levelling upward which is taking place in the ranks of gardeners. The old easy-going representatives of our ancient craft are fast disappearing under the exigencies of present times. There is so much good work being done in all directions that those who are not animated by a spirit of progress and constant endeavour find the weak points in their armour by comparison with the good work around.

To my mind this state of affairs has been brought about principally by three causes; perhaps the principal one is the great facilities for acquiring knowledge which have for some years existed. Garden literature is now so cheap as to be within the reach of all, and the majority of sound cultivators, instead of following the old practice assiduously guarding their cultural secrets, now feel it an honour to record them for the benefit of their fellow men. The prevalence of the broad and generous views upon the subject has had the effect of causing a widely extended interest to be taken in horticulture; this in turn has brought into the ranks of professional gardeners a large proportion of men who have adopted the calling out of downright love for the work, which enables them to make light of difficulties which others, not fortified with a special liking for it, are apt to consider too troublesome to be overcome.

The only other cause of progress to which I will now refer is the largely increased number of exhibitions which are held in every part of the country. These create a keen spirit of emulation which, aided by the means for obtaining knowledge supplied in the horticultural press, and quickened by the high ideals which those who are in earnest endeavour to reach, form a combination of circumstances which must result in progress.

Thus far these notes may be rightly considered to have treated of the past rather than the future, but the remarks I am about to make will, I think, do something to justify the heading chosen. If we attempt to foreshadow the course of future events in the horticultural world, not altogether in the light of a hap-hazard prophecy, but rather by the indications of present times, which I have attempted to show are the effects of various causes, what feature is likely to be the most distinctive one in helping forward the progress of the times to come? My own opinion is the establishment of experimental schools of horticulture wherein the purely scientific discoveries bearing on the subject may be thoroughly tested in a variety of ways, to see how far it is necessary and profitable to take advantage of them, and also to discover the best practical means of application. Lectures should be given, and printed statements published periodically to show the result of these experiments, so that practical men might have every confidence in relying upon the information thus gained without having to test it again for themselves. One point necessary for the success of the scheme would be to see that these schools were not governed by mere theorists but managed by gardeners who had spent ten or twenty years in some of our best public or private establishments, and whose ability and capacity for experiment and investigation stamped them in no uncertain way as capable men for so important a post.

In the life of the gardeners of to-day there is but little time to dabble in experimental work. Their thoughts and actions are so much concentrated upon the sternly practical labour of providing for the requirements of their employers. Under such circumstances the progress to be expected from experiments which belong to nobody's business to carry out, must of necessity be both hap-hazard and slow. Perhaps other readers of the *Journal of Horticulture* may have something to say in the matter, which must be one of common interest; at least, so thinks—A BLAIT BOWKAIL.

THE ROYAL GARDENERS' ORPHAN FUND.

THERE are a few matters arising out of the recent annual meeting of the subscribers of this Fund that may be worthy of comment. First there is the difficulty created in the ballot by the announcement made at the last moment that candidates C and D had been withdrawn. Of course all votes recorded for these were wasted; no doubt much to the annoyance of subscribers. In the case of such a difficulty occurring again subscribers should be permitted to have a second or reserve candidate to which their votes might be transferred.

Then, arising out of the grave complaint made by Mr. Brown, that the gardeners of the kingdom as a body give so little support to the Fund, it is worthy of notice that not one of the deceased fathers of the seventeen candidates is returned as a subscriber. Is it not true that regulations somewhat analogous to those now found in connection with the Gardeners' Royal Benevolent Fund were established, by which so many votes should be credited at an election to orphan children of subscribers? I would favour the allowing of twenty votes for every year's subscription, providing the case was one that the Committee could honourably accept. Thus subscribers would receive very special encouragement to contribute, and it would further put some check upon the present method of election, by which not at all do the most meritorious ones get elected, but rather those who can secure the greatest amount of personal influence in their favour.

I think some cases ought not to be accepted in the way they are. "Mother keeps a public house" does not present an object for charity; neither does such a case as of seven children "six of the varying ages of from thirteen years to twenty-four years." Surely these ought to be ashamed to ask a pension for the remaining one. In yet another case. "Mother is in receipt of £20 a year, and takes in lodgers." Subscribers have a right to ask that the

Fund be not burdened with the cost of printing such cases as these. Unhappily they divert votes all the same, that might be better directed in helping to place some really meritorious cases on to the Charity.

Would that subscribers never promised a vote to any canvasser until they had seen and carefully examined the list of applicants, and then vote solely for the most meritorious cases. There is a case of a poor mother who "supports herself by washing and charring," poor, brave heart, and has "seven children, ranging from two years to fourteen years"—what a burthen!—but is left out in the cold. That cases of "one child only" and "two children only" may be elected because these have influential trade-backing. How miserably hollow after all is our belauded charity when such things can be. Here is a chance for the wealthy subscriber of £13 per annum, under the newly amended 12th Rule, to display his generosity, not forgetting further to contribute a subscription sufficient to cover his due share of management expenses.—ALEX. DEAN.

HARDY FLOWERS IN FEBRUARY.

PLEASANT in many respects as is a mild February, it brings with it some features at times we would gladly be without. This month is not always true to its character of "fill dyke," and in some years it is full of beauty; the sun, for the short time it is in view, shining as in summer, bathing the Solway and the adjacent coasts in golden beauty, and with the, at times, balmy air bringing to perfection the early flowers, which love to bloom unharmed by drenching rain or boisterous winds. This year it is not so, and the tender blossoms, which appeared after the severe frosts in early January had spent their force, have had to contend with western gales, which brought with them torrents of rain. Thus it is that the garden has in some things been later than in previous years, and we have had to bewail the luckless fate of some of our early favourites.

Yet with all, whenever able to cross the threshold, we were greeted by some vision of loveliness, which one felt was the silver lining of the cloud in which the storms had enwrapt the garden. The chaste Snowdrop, with drooping head as if beseeching more tender treatment, adorned many places; the Crocus, in varied hue, wooed in vain the sun it loves. Bright little Cyclamens made visions of light in darksome corners; the Winter Aconite, with cups of gold, brightened the borders; and a few of the early Saxifrages, with modest beauty, made their allotted places little centres of attraction. Nor did other flowers lack desire to give us pleasure, for Primroses—from the pretty Munstead Early White and Altaica of the gardens to the common wilding, transplanted from the woods and shores near hand—shone in various corners. *Anemone blanda* also, which I have in various shades from white, ranging through rose and light blue to dark blue, had begun to open. My plants are nearly all from the Bithynian Olympus, and the effect of masses, such as can be produced by a number of roots, is pleasing in the extreme. A few of the early Squills, such as *S. sibirica* and *S. bifolia*, have been showing colour, and a week or two would give greater brightness from these useful bulbs. The beautiful *Chionodoxas*, too, of which *C. sardensis* has this year formed the advance guard, have begun to bloom, and these, which are among the most precious of our early spring flowers, will soon be pictures of beauty. The earliest of the Daffodils, *Narcissus minimus*, a little beauty, has been later than usual, and has been closely followed by *N. minor* and *N. pallidus præcox*.

Perhaps the most attractive of all, and valued not only for their comparative rarity but for their great beauty, have been the early Irises. Among the earliest of these is *Iris Dunfordiæ*, with small but bright yellow flowers. *I. histrio*, the Actor Iris, which, unfortunately, does not do well in every garden, has been very beautiful with lilac standards and pale lilac falls spotted with a deeper shade of the same colour and a yellow keel down the centre. Equally pleasing has been the little *I. Bakeriana* with its blue spotted flowers. *I. histrioides*, a useful early little Iris with blue flowers also, is very attractive in its way; while the varieties of *I. reticulata*, now becoming numerous, would in themselves make a garden interesting, ranging from the purple flowers of *I. r. Krelagei* and the clear blue flowers of *I. r. cyanea* to some of the dark blue varieties. They seem to thrive well in the sandy peat soil of my garden, and to be troubled with no disease. *I. Rosenbachiana*, one of the finest of all, had to be removed last summer, and is later of flowering this year. This beautiful species is rather variable in shade, and in time we may hope to have more varieties than at present.

A curious little *Colchicum* has also been in flower for some time. This is *C. montanum*, growing from 3 to 4 inches in height, and a native of the Mediterranean region, whence it was introduced about 1819. It is only in the bud state that I care for this flower,

which is white at first and passes to lilac-purple. When open the flowers are too loose and ineffective to be very ornamental, but at this early season one is disposed to be less critical of the flowers which deign to appear. This is of a running habit, and a root or two will soon form a clump, which should be confined to a limited space. This is not *C. alpinum*, which has also the synonym of *C. montanum*, but is said to be synonymous with *C. bulbocodioides*.

Ever welcome, too, is *Bulbocodium vernum*, which, in this early season of Crocuses, can still hold its own on account of its bright purple flowers, being so distinct from any of the many beautiful species we admire so much. It is unfortunate that it is so much beloved of the snails and slugs which play sad havoc with it; while the nearly allied *Colchicum montanum*, that could be better spared, is left untouched. The likes and dislikes of these gastropods are very peculiar, but in one point they are remarkably unanimous—this is, that if there is a new or rare or a specially valued plant in the garden it is likely to be tasted, sadly to its detriment. A charming plant on the rockery is the white variety of *Saxifraga Boydi*, which has come into flower early in February this year. It is a fitting companion to the valuable yellow one *S. Boydi*, and it is to be hoped that many gardens may soon possess these Rockfoils, which are much more easily grown than *S. Burseriana* or *S. B. major*. The two last—especially *Burseriana*—have a bad habit of becoming patchy and dying off, and I find it necessary to propagate them every year, although the progress of decay may be greatly retarded by working a little sand and peat among the tufts. *S. sancta* is doing well this year, but *S. luteo-purpurea* is later than I have had it for some time.

The *Chionodoxas*, previously alluded to, seem as if they would be among the most valued of our spring bulbs. This position has been early achieved, and few flowers are more appreciated at this season. These "Glories of the Snow" appear to be variable in their native homes, and in addition to the various shades of lilac and of blue, white varieties, although scarce, have been in cultivation for some time. We have now to welcome another acquisition or two in this family in a red-coloured *Chionodoxa* and a variety of *C. sardensis* with a dark eye, instead of the little patch of white forming the centre of the typical *sardensis*. For these we are indebted to the enthusiasm of Mr. Whittall of Smyrna. I am so fortunate as to possess a single bulb of the red Glory of the Snow, and am anxiously awaiting its flower, so that one may appraise the value of this new colour. Even if lacking in brightness, the *Chionodoxas* seed so freely that there can be no doubt of our gaining a bright red variety. We shall soon, too, have many *Chionscillas*, the hybrids between the Glory of the Snow and the Squills, as they cross readily both naturally and artificially and seed freely also.

Scillas are also multiplying in number to the enhancement of our gardens, and I am much interested in the flowers of a large variety of *S. bifolia* from the Bithynian Olympus. This is at present named by the collector *S. bifolia grandiflora*, and is found at a greater altitude than the ordinary *bifolia*, which also occurs on Mount Olympus. It was only received last year, and the bulbs not yet being fully established, the spikes and flowers are smaller than they will be in future years. They show sufficiently, however, that this is a much superior flower to the ordinary *S. bifolia*, and the dried flowers which I received last autumn quite bear out the account given by the collector.

Several of the *Hepaticas*—favourites of mine from boyhood—have come into flower, and help to enliven the borders and rockeries. Some of these are rarer, but none have so much effect as good clumps of the double red variety, which give us a colour not too plentiful in the early days of spring until the Tulips come into flower.

Some of the finer Snowdrops would tempt me to speak again of their beauty, but I fear the Editor will think me praising these unduly, so must forbear. Some other flowers there are, too, which will give us welcome beauty and keep the garden full of interest until the many Daffodils, which "take the winds of March with beauty," greet our admiring eyes. Enough has, however, been said to show that even amid storms of wind and rain and cloudy skies our British gardens can yield pleasure to him who seeks to fill them with the fragile yet hardy flowers which scatter their beauty with no reluctant hand.—S. ARNOTT.

INJUDICIOUS TREE PLANTING.

ONE of the principal reasons why tree planting is not more remunerative, and consequently why it has not, of late years in particular, been more extensively engaged in, is that in very many cases at least a haphazard system has been adopted, and little or no attention paid to the suiting of the trees to the particular soils

in which they are to be placed. There are hundreds of acres of Larch timber in Bedfordshire and some of the adjoining counties that at thirty years' growth are decayed at the core, and only worth on an average one-third the price that at their age and size they should have realised. To those persons who have studied soils in relation to trees the cause of this decline in our most valued Conifer is not far to seek, for the practical arboriculturist knows well that neither sand nor gravel can sustain for a lengthened period a healthy condition in the Larch.

Most trees can survive and remain healthy on almost any description of soil, although the rate of growth and quantity of timber produced may not be at all satisfactory; but this is not the case with the Larch, which suffers terribly from disease when certain conditions, but more particularly that of soil, have not been attended to. From almost every part of Great Britain and Ireland I have had specimens and descriptions of Larch trees that have become unhealthy and are rapidly dying out from one or other of the diseases to which the tree is so liable; but in nearly every instance the cause of failure can be distinctly traced to planting the trees on the wrong classes of soils.

"Pumping," or becoming decayed at the core, is a widespread evil to which the Larch is particularly susceptible, and owing to which thousands of trees have of late years been rendered worthless or almost so, and the returns in consequence greatly diminished. Not long ago I was asked to value a large plantation of this tree that had become seriously affected not only from "pumping," but from the ravages of the unfortunately far from uncommon fungus pest, *Peziza Willkommi*. The trees in this case were in a most pitiable condition, patches containing several hundreds of specimens, and mostly from 30 feet to 36 feet in height, being utterly worthless for any constructive purpose, and only fitted for the most temporary class of fencing or for firewood. Under ordinary conditions the value of these trees should have been on an average 4s. each, or, standing as they were, about £80 per acre. But this is only one case out of many that could be mentioned where, owing mainly to an unwise discrimination between trees and soil, great loss to the owner had been brought about.

If anyone interested at all in trees and their growth will carefully examine a large mixed plantation, where the conditions of soil, exposure, vary considerably, it will be found that there is a great disproportion in size of the individual trees of a species, and it will also be noticed that where the largest and healthiest occur the tree is growing on its own particular soil, and flourishing at the expense of all around it. The finest Oak will be found where the soil is deep and loamy, resting on clay; Beech on calcareous gravel, resting on a bed of chalk; Ash and Elm on rather dampish loam or alluvial deposit; the Scotch and Corsican Pines (*Pinus sylvestris* and *P. laricio*) at fairly high altitudes on gravelly well-drained soils; and the Cluster and Aleppo Pines (*Pinus pinaster* and *P. halepensis*) in almost pure sand on the seacoast.

There is no reason now-a-days for continuing to adopt the system of mixed planting carried out by our forefathers, under the plea that if one kind fails another may succeed, for with our nineteenth century knowledge of trees best adapted for various soils we may plant with the greatest certainty of success. Nothing tends more to lower the art of forestry in this country than the chance or haphazard system of tree planting that, even at the present day, is such a conspicuous feature of our woodlands.—A. D. WEBSTER.



LÆLIO-CATTLEYA HON. MRS. ASTOR.

THIS beautiful bigeneric hybrid was exhibited by Messrs. F. Sander & Co., St. Albans, at the meeting of the Royal Horticultural Society on the 13th inst., and attracted more than ordinary attention. The flower depicted in the engraving (fig. 22) was borne by a small plant, said to have been raised from seed about five years ago, and for which a first-class certificate was awarded. The hybrid in question is the result of a cross between *Lælia xanthina* and *Cattleya Gaskelliana*. The flowers are large and attractive, the petals and sepals being pale yellow shaded buff. The front lobe of the lip is rich purplish rose, tinted violet and margined with lilac, the throat being yellow veined purplish brown.

ORCHIDS IN FEBRUARY.

THERE is hardly a month in the year more likely to excite interest and enthusiasm in the Orchid houses and their occupants than the present. With the lengthening days the number of species and varieties in flower increases, and the houses daily grow brighter and more attractive. *Odontoglossums* are now making a fine show, the varieties of *O. crispum* and *O. Pescatorei* being especially useful, while *O. triumphans*, *O. Rossi*, *O. maculatum*, *O. Andersonianum*, *O. pardinum*, and others all contribute to the attractions of the cool house.

Dendrobiums are flowering unusually well this season, the growths being so well ripened last year no doubt accounting in a



FIG. 22.—LÆLIO-CATTLEYA HON. MRS. ASTOR.

great measure for this. *D. nobile*, that most useful and beautiful species, is well to the fore; also *D. Wardianum*, the most chaste of all *Dendrobiums*. *D. crassinode Barberianum* and *D. aureum*, *D. speciosum* and its var. *Hilli* are past their best, but will soon be followed by the elegant racemes of *D. thyrsiflorum*, *D. chrysotoxum*, and others of the evergreen species.

Cypripediums, though not so showy as some other kinds, are nevertheless very acceptable, the length of time they remain in good condition being a great point in their favour. *C. Sedeni*, *C. villosum*, *C. Boxalli*, and *C. bellatulum* are amongst those now in flower; whilst *C. barbatum*, *C. Lawrenceanum*, and others are coming on rapidly. *Cattleyas* are chiefly represented by *C. Trianae* and *C. Percivaliana*, both very valuable species, the markings on the lip of some varieties of the latter being very beautiful. *Cymbidium Lowianum* is now in good condition, as are also the gigantic spikes of *Lælia superbiens*, a splendid species which well repays any trouble taken in its cultivation.

Lycaste Skinneri and its varieties are the most prominent members of this genus now flowering, and here it may be said that great care is necessary to prevent the flowers being spotted by damp, the white varieties being especially susceptible to injury. It is a good plan to entirely withhold water from this species when in bloom, and if the plants are grouped together there is less risk of injury from watering contiguous plants. *Cœlogyne cristata*, and one or two others, contribute their quota to the general attractiveness; while the snowy white *Masdevallia tovarensis* and the glowing *Sophranitis grandiflora* are still flowering freely.—H. R. RICHARDS.

FACTS ABOUT GRAPES.—No. 2.

MADRESFIELD COURT.

BEFORE this variety was seen at its best upon the exhibition table the Black Hamburg was the mainstay of those who competed with collections of fruit in which two varieties of Grapes were allowable. At that time the impression generally expressed was to the effect that no other black Grape would ever surpass the old favourite, always provided it was shown in good form, but it is never safe to prophesy unless we know. If Black Hamburg and Madresfield Court, each equally well represented, are in open competition, the latter is usually preferred by good judges, and I think rightly so.

At its best it is a handsome Grape, the bunches being long, well-shouldered, and tapering to a good point, and in this respect is decidedly the superior of its older rival, the Black Hamburg. Then, again, it is a free setter, the berries being large, even, and, as a rule, carry a good bloom. Whether they shall be of a rich purple-black colour or not depends largely upon the cultivator, a no very impressive remark be it said, but it will be seen presently what I mean. Even if the colouring is not satisfactory, the quality is rarely at fault, Madresfield Court being one of the best-flavoured Grapes I know. Nor can any fault be found with it on the score of non-productiveness, as I have always found it most productive, the bunches also being finer than the size of the young wood would lead us to expect.

The foregoing is a tolerably good character to give to a Grape, and if there was not more behind of a less laudatory description the Madresfield Court would, perhaps, be generally voted the best all-round variety in cultivation. Not till the colouring period is reached does the cultivator's trouble commence. One day the state of the crop may be all that could be wished, and the next this good prospect be greatly marred owing to a wholesale cracking of the berries. What caused this unfortunate occurrence was for some time an open question, some growers attributed it to one thing and others to another. It was well debated in these columns, and if I remember rightly I was one of several who took the wrong line of argument. I thought then, as some still maintain, that the splitting of ripening berries was brought about by a too late free application of water or liquid manure, or it may be a heavy fall of rain and dull weather following upon a dry time.

Friends of mine who had little or no cause of complaint stated that their borders were never allowed to become in the least dry, but on the contrary were given more water and rich food from the first than thought necessary in the case of other Grapes in the same houses. There was, therefore, no premature hardening of the skins, and no sudden rush of sap and consequent cracking of berries owing to a soaking of water being given after the Vines had suffered from want of it. The other extreme, or the keeping the border very dry during the ripening period, was recommended, and probably is still practised in some cases, as a good preventive of cracking, instances having come under my notice of the Vines adjoining dried off, Madresfield Court flagging badly. Curiously enough, the latter did not apparently show signs of suffering from want of water, and this experience of it did not turn out altogether satisfactory as far as colouring or even cracking was concerned; certainly proved the Madresfield Court to be a very "long suffering" variety, or more so, say, than Foster's Seedling growing alongside it.

Of late years I have repeatedly proved, to my own satisfaction at any rate, that wholesale cracking may take place even if the border has been kept uniformly moist, and also if rather dry during the ripening period. I have also found the border far drier than I cared to see it while the berries were colouring, and yet no cracking worthy of mention take place after a good soaking of water was given. Evidently the most frequent, if not the sole cause of berry cracking, is to be traced to faulty ventilation, and the advocates of the endosmose theory deserve every credit for the stand they made and the good service rendered. When the berries are swollen to their full size it only needs a very little moisture to pass through the skin to bring about bursting, and that is actually what does take place in nearly all instances where the ventilation is at fault. In order to guard against the sudden rise of temperature and an atmosphere overlaid with moisture, a free circulation of air must be kept at all times, and in particular during dull showery weather. Attempting to do without fire heat is quite a mistake, as in order to keep up a buoyant atmosphere air ought to be admitted at the front lights, pass over a warm flue or hot-water pipes comfortably heated, and out of the top ventilators. Without the aid of fire heat the circulation of air is very sluggish at times, low temperatures likewise being prejudicial to perfect ripening.

Not only is a fairly brisk circulation a sure preventive of

cracking, but it is also needed in order to promote perfect colouring of the berries. From the time the Madresfield Court under my charge commences colouring the front lights are never wholly closed during the night, and a chink of top air is also left on constantly. Nor is this all. Owing to the top air being admitted by running sashes there are times when these must be drawn up nearly close, or otherwise too much moisture may find its way into the house for the benefit of ripening and ripe Grapes. Then if these lights are not opened again directly the sunshine breaks through the clouds, there is a rapid rise in the temperature, and vapour accumulates on the berries to a very dangerous extent. To obviate this difficulty and for another very sufficient reason several end squares of glass are taken out opposite the bunches of Madresfield Court, which fortunately are near to the end of the house, and quarter-inch galvanised wire netting substituted. Since that practice has been adopted scarcely any berries have cracked, whereas previously I have had whole bunches spoilt in a few minutes.

This admitting air thus freely while yet the berries are not fully grown has its drawback, as it undoubtedly militates against the Grapes attaining a large size. On the other hand, a free circulation of air is absolutely necessary to promote perfect colouring of the berries, and the laying on of a good coat of not easily disturbed bloom. The berries are frequently grown by other gardeners to an extra large size, and consequently severe thinning is particularly needed in the case of the Grape under notice, or more so than I can always bring myself to practise. Unfortunately the largest sized berries very rarely colour properly, if ever they do. There is always a greenness apparent near the footstalk, this greatly detracting from the value of the bunch from an exhibitor's point of view. Air being admitted so very freely invariably leads to our bunches colouring beautifully, but then as before stated, the size of berry is at fault. This season I hope to see the berries a shade larger and yet well coloured, but whether any risks will be run in the way of keeping the glass at the ends of the house intact longer than usual remains to be seen.—W. IGGULDEN.

LANDSCAPES.

APART from gardens and gardening, which it is obvious does and should claim our first attention, there is another phase of the art on a broader basis, that of Nature's domain, in which we do not intrude as workers. Yet this must ever play an important, if a secondary, part in our lives; and it is a field in which we, too, can learn many a lesson from the silent teacher. Varied and soul-stirring is the beauty of the landscapes of "Merrie England," with the bolder and more rugged grandeur of "Caledonia, stern and wild;" whilst Ireland, "emerald gem of the sea," more than holds her own in natural beauty. Each with characteristics of their own together form a field of observation for those who have not the opportunity of seeing Nature's pictures in other lands, and perchance there are many who do can say on their return—

"Where'er I roam, whatever realms I see,
My heart untravell'd fondly turns to thee."

In order to draw comparison with our own country and distant lands it would be necessary to eliminate for the time being that feeling of *amor patriæ* existing in all races, white or black, which is a consideration scarcely possible with even the proverbial Englishman's love of fair play, and for that right and proper feeling due margin must be allowed. Those persons whom circumstances confine to the limits of our snug little islands can at least enjoy what is worthy of admiration, and probably find ample room in so doing without that ever constant dread a transatlantic visitor had of stepping over the side into the sea.

True, we cannot in our geography lay claim to "the biggest things on earth," at the same time there is some consolation in the reflection that some of these big things have drawbacks we can well do without. In that grand chain of the Rockies of the West are bred the discords of the elements, those cyclones and blizzards, which sweep down from their mountain home to carry destruction and desolation across a continent; or in the tropical luxuriance of the "Garden of the Sun," where only man is vile, and the Bornean head-hunter gathers his peculiar fruit, we escape their reaping-hooks amongst a crop that could be ill spared; there are, too, bits of earthly paradise where Nature is found in her most loveable moods. But these influences are too enervating. Here Nature does too much and leaves too little for man to do, smilingly giving him all he wants, whilst we, in these islands, have to wrestle with her when she frowns—and she often does—but in the struggle is formed the sinews and muscle of a nation. So putting out of mind what we cannot possess and are possibly better without, let us at least enjoy what we have, and we have a great deal.

A prominent feature of our landscapes is the conditions under which they are viewed, the normal behaviour of Nature in her capricious yet charming moods, when with sunshine and shower the hurrying clouds throw their lights and shadows over hill and vale. We may perhaps think there is too much shadow and too little sunshine; yet there are seasons when this order is reversed, then the constant smile, like that which may now and again be seen on the face of a specimen of the genus *Homo*, becomes insipid. As a rule, and in comparison with other lands, our rain and sunshine, heat and cold, are provided for us well mixed, and though foreign visitors are apt to grumble and condemn our climate, we give them the best we have. Even with us the infectious go-ahead notions of the age lead us to look for the highest hill, the deepest gorge, or the biggest thing of its kind, resulting in some danger of overlooking the humbler scenes, breathing not less the deep beauty of Nature, and in these humbler scenes of rural life modern innovations are crushing out some of the adjuncts of the good old times. I recollect on one country road dotted with the picturesque villages and hamlets, of sunny Kent, leading to London, as all roads do, how sweet the music of the bell teams used to sound; but they have long since gone off the road and a monster has taken their place in the form of a traction engine, tugging laboriously at the heavy loads of luscious produce for the hungry city. But what has a traction engine to do with the beauty of an English landscape? Nothing, decidedly nothing, beyond crushing the poetry out of it.

This Garden of England, how beautiful it is! Through it, across it, or round its cliff-embattled south-east coast line, or where Father Thames laves its undulating shore, with the low-lying Essex coast acting as a foil. Rich in historic associations of Church and State, Canterbury with its Cathedral, Rochester no less hallowed by its associations with that unique pen-painter of human life, the immortal Dickens. As with countries, so with the counties of the three kingdoms, comparisons may be drawn, but each possesses in more or less degree features and outlines of beauty for the observant eye. Even near our great cities some charming views of wild gardening are to be found in those commons and plots of waste land, most of which are now religiously preserved from the hands of the builder, and their value for health and recreation to the busy workers of the great industrial hives is unquestionable.

In the earlier days of our quiet lives we gardeners are to some extent rolling stones, and though proverbially the process is non-conducive to moss-gathering it is essential in order to gather that wisdom and experience which is to be our armour in the coming battle of life. It is in this stage of our existence that so many opportunities come to us for making acquaintance with fresh parts of our own country, and in after life it is very pleasant to take an occasional turn in this picture gallery of memory gathered when the mind is most impressionable. At this age, too, ten or twelve miles across country on Shanks's mare is no extraordinary feat of horsemanship, and this method of travelling gives facilities for observation that more hurried ways of locomotion do not—the vantage points can be picked out, for even natural landscapes are not always viewed in the most favourable light. It is difficult for the mind to seize on the hills and valleys as they rush by you when seated in an express train, even then to be ever and anon shut out by the banks of some deep cutting.

Rather more than a score of years have passed since I left Kent for the "fresh fields and pastures new" of Gloucestershire. The driver who was sent to meet the new man with his box at the station, a cordial, happy looking native, freely gave me the information I was so anxious to know about this terra incognita which was for the time being to be my home, and a very happy home it proved to be. Well do I remember asking him if we were near the Cotswold Hills, and his answer, "Why, beest on th' top now," and on the top sure enough I was for two years, though there was some difficulty in reconciling these far-stretching ridge-and-furrow undulations with the blurred mass on the school map, until later on a ten-mile walk took me to the top of Leckhampton Hill, an outlying spur, then, looking far down over the Golden Valley, over Cheltenham lying below, it came as a revelation. Beautiful, quaint, and lonely are these Cotswold Hills, hunting grounds in many senses for Nimrod, the botanist, or antiquary; Roman villas to be seen in the middle of woods, Roman snails, large, fat, luscious looking fellows nearly white, curiosities in these degenerate times, not now the dainty table delicacies they were when established by the Roman conquerors 2000 years ago.

Unintentionally I have let my thoughts run away with me, and have nearly betrayed myself into particularising on a subject which to say the least is vast and comprehensive. To sum up, or rather find the difference in value between our quiet peaceful island land-

scapes and those Titanic scenes of foreign lands, we can, while allowing them, say six points, justly take half a dozen for ourselves.—E. K., *Dublin*.

SOWING SEEDS.

(Concluded from page 104.)

A LAUDABLE desire to be somewhat ahead of our neighbours in the production of early crops of vegetables sometimes places us in the opposite position. Our anxiety on that point induces us to sow seeds before the soil is in proper condition for that purpose, and when our better judgment teaches us that we are making a mistake. Perhaps most of us require a few salutary lessons to convince us that nothing is gained by inserting seeds in ground which has not acquired the necessary degree of warmth to effect germination; and that the longer seeds lie in wet cold soil before this occurs, the greater is the risk of losing some of them by decay, and the slower will be the progress made when growth begins, because the operation of sowing under such condition clogs the soil, and prevents or retards aëration, without which rapid and healthy root action in young plants cannot take place.

The weather and condition of the soil this year have been more favourable than usual for seed-sowing, and the season promises in all respects to be an early one. All quarters intended for seed beds if not recently dug should, when the frost departs, be forked up so as to allow the soil to become dry upon the surface. If a bright drying day is then chosen for sowing, and the drills are drawn early in the morning, sowing may with advantage be deferred for a few hours to allow the soil in the drills to become warmed by sunshine, and in the best possible condition for the reception of seeds.

I make a practice of scattering soot upon the surface of all seed beds before the drills are drawn; being such a well-known antidote against insects and so excellent a fertiliser, I attach great importance to this cultural detail. Those who have heavy soils to deal with usually experience considerable difficulty in rendering it fine enough for the reception of seeds. In such instances I think burnt refuse might with advantage be much more freely used than it is, for in most gardens abundance of it may be had by keeping a fire constantly going at the rubbish heap. Some of this should be sifted and scattered along the drills before the seeds are sown in sufficient quantity to admit a portion of it being drawn over them with a rake previous to filling in the drills with the natural soil, which, of course, ought to be made as fine as circumstances permit. The great point is to get plenty of finely divided crumbly earth nearest the seeds, so that the young roots may freely penetrate it till they have gained sufficient strength to contend with opposing obstacles. It is not of so much importance to make the surface soil fine, as that is certain to crumble down under the influence of the weather. Even when sowing seeds on light well pulverised soils, where burnt refuse is not required to act in a mechanical way, I find the young plants grow much stronger in the early stages when this useful substance is placed in the drills, than when only the ordinary soil is used. My own opinion as to the cause of this is, that burnt refuse contains a greater per-centage of soluble matter than common soil does, and is therefore at once available as plant food.

Do not sow seeds too deeply in soil which is the least stiff, for should wet cold weather follow, many of them would inevitably perish. In sowing Onion seeds on land of this nature I prefer to have the drills only half or three-quarters of an inch in depth, instead of the regulation inch. Again, some soils are so light and sandy that they may with advantage be made $1\frac{1}{2}$ inch in depth, from 10 to 14 inches being a good distance to set them asunder, according to whether large or medium-sized bulbs are required. Where extra large ones for exhibition purposes are aimed at, a good plan is to have them in beds containing only two rows each, these being set 18 inches apart, 2 feet being allowed between the beds. There is then ample room to attend to their cultural requirements without injuring the tops. A row of Lettuce may be planted in the alleys between the beds, which will be cleared off before the Onion tops have made much growth. Carrots of a similar type to Early Gem and Early Nantes, which are usually sown on a warm border where the space is valuable, succeed well if the drills are placed only 9 inches asunder, as the roots are invariably drawn as soon as ready for the table. For those of the intermediate type 15 inches between the rows is not too much. The same distance answers well for Parsnips unless large roots are required; while for Beet 1 foot is usually sufficient, as large roots are not to be commended.

After sowing seeds of the above descriptions, and filling in the drills with the back of the rake, if the soil is light and dry, a thorough treading ought to be given before the bed is levelled with a fine

rake, but unless the soil is dry it is better to defer the treading for a few days, and in the case of heavy soils not to tread at all, instead be content with pressing down with the back of the rake.—D. W.

PLANTING GLADIOLI.

THE time for active operations is at hand, albeit the gardener is never quite at rest, for even during the dark days of winter preparations for the future have to be made. When the first flush of spring comes, flowers begin to open, and birds to resume their activity and gladden us with their song, there are many things that crowd upon his mind; flowers, fruit, and vegetables alike claim his attention, and the difficulty is, what shall he do first? Although the Gladiolus may be planted now—probably where there is a very large stock planting will commence this month—yet there is abundance of time for ordinary growers. Nevertheless, it may be useful to direct attention to the subject so that growers, especially if they be beginners, may be prepared for the work before them.

The present is, of course, inseparably connected with the past season, for one cannot get the bulbs ready for planting without being reminded of what a fine season the last was for them. In my own garden, where the soil is light and naturally containing a good deal of humus, neither of which are advantageous to the culture of the Gladiolus, I have never lifted finer bulbs, nor for some years have my losses been so few. Contrasting the bulbs last year with some previous wet autumns, one is forced to the conclusion that a dry season suits them best; and if instead of the very wet October we had experienced a fine month I have no doubt that my harvesting would at any rate have been better. The experience of other growers tallies with my own, and although the blooming season was somewhat shortened by the drought, most cultivators regarded 1893 as a favourable year.

There are two sections of this fine autumn flower which are now recognised as well worth cultivating in our gardens. The Gandavensis section, which comprises all the fine varieties that we have been in the habit of seeing for years, and to which we are indebted for the steady perseverance and intelligent cultivation of the late Mons. Souchet at Fontainebleau and his successors, M M. Souillard and Brunelet. It is of these that the greater portion of the collections grown in gardens is composed. Of late years another has been added to our gardens in the so-called hardy hybrids raised by Lemoine (at Nancy) and others; these are hybrids of purpurea, auratus, and Saundersi, crossed with Gandavensis. I have used the term hardy (so-called) with reference to them because I am very doubtful whether they have any claim to the title. Mons. Lemoine himself says they must have some little protection in the winter, but that same amount of protection, whether of leaves, cocoa-nut fibre refuse, or ashes, will, I think, most probably equally preserve the hybrids of Gandavensis. I left a row of mine in the ground this winter, and do not find that they have been affected by the frost, so far as I can ascertain at present. True, we have not experienced a continuance of severe frost such as we had in the previous winter, and consequently one is not well able to decide as to what amount of cold they will endure; but I am inclined to think they will stand as much as the Lemoine section.

In making the beds for planting it is, of course, as in all cases of florist flowers grown in beds, desirable to have the ground prepared in the autumn, but this is not absolutely necessary, provided that when the weather is favourable it be well trenched, and manure laid at the bottom of the trench so as not to come into contact with the bulbs. I have not seen anything to alter my opinion as to the kind of soil that suits them best, and therefore where the natural soil is light or sandy a goodly portion of stiff loam may be dug in a little while before planting. The beds should be in a good airy position, but not exposed to high winds. The most convenient sizes for the beds is about 4 feet wide. This will admit of four rows of bulbs, the rows being thus 1 foot asunder, while the bulbs should be about 9 or 10 inches apart in the rows, and, indeed, where space is of no consideration a foot may be given to them.

There are two ways in which planting may be done—either by drawing a drill, or by making a hole for each bulb. I prefer the latter when the collection is small, for though it is more troublesome, I think it gives better results; and as my soil is naturally light I fill the hole with some stiff loam, and place some road grit beneath the bulb. I prefer this to sand because the latter “pads” (as we call it in Kent) while the road grit keeps open. The practice of cutting the bulbs in halves is now almost universally adopted by growers, and I know of but one who speaks against it. He gives no reasons for his opposition, but says “I don’t like it.” On the other hand grand spikes exhibited by

Mr. Lindsell, Mr. Fowler and Mr. Burrill, of which the greater portion were from cut bulbs, gives strong testimony to the value of the operation; but it must be remembered that not only does it prevent the crowding of spikes issuing from the same bulb, but it also doubles the number of plants. I may add from my own experience some of the finest bulbs that I took up last autumn were from those so treated.

Whatever may be the difference of opinion as to the cause of losses amongst these bulbs, I have no hesitation in saying that the best way of keeping up a good and healthy stock is by saving the spawn. Where this has been the case these young bulbs had better be planted; I had almost said sown, for it is more like that than planting at once. It gives them a better chance of blooming, and as some of them have a very hard case, the longer they are in the ground the more likely are they to grow. The best method of procedure is to open a shallow drill and sow them in it as you might do Onion seed. I saw one such bed at Mr. Fowler’s at Taunton last autumn, and it was like a bed of young Barley. It may be asked, “How long will it be before these bloom?” This very much depends on the size of the bulblets, many of which in some varieties will be as large as a Filbert. These will most probably bloom well in the autumn where the soil is favourable to them, and in two years’ time most of them may be expected to flower. A bulb, which when planted is about the size of a small Walnut, will throw a good spike of bloom, and some of the magnificent spikes exhibited by Mr. Burrill last season were cut from bulbs of this character. These observations apply to the hybrids Gandavensis. The Lemoinei groups are left much more to themselves; in fact they need only be lifted every second or third year, and may then be planted again, dividing the bulbs a little, for they are more suited for garden decoration than for exhibition.

With regard to varieties which I would recommend entirely depends on the requirements of the grower. If he be a beginner it will be well for him only to try those which have been in commerce for some years, and are consequently cheap; while if he be more ambitious, there are some few varieties which have been sent out of late years which he would do well to possess. I subjoin therefore for the guidance of both of these a short list, which I think will meet their requirements.

List No. 1.—Africaine, chocolate-brown, scarlet flushes, and white blotch; novel and good. Amalthée, pure white, large violet-red blotch. Amitié, pale creamy rose, shaded straw, and lightly flaked purple. Archduchess Marie Christine, white, tinted and flaked carmine. Baroness Burdett Coutts, lilac, tinted rose and purple. Bicolor, top petals bright salmon-rose, lower divisions white edged rose. Cameleon, slaty lilac, striped white, pale orange blotch. Cervantes, bright rose tinted carmine, white stripes and orange tinted lower petals. Conquérant, dark purplish carmine. Crepuscule, pale porcelain tinted lilac. Dalila, lilac suffused violet. Eugène Scribe, white, suffused carmine. Flamboyant, bright scarlet-crimson. Formosa, pale satin-rose, lightly striped carmine. Grand Rouge, scarlet-crimson, small violet blotch. Horace Vernet, purple-red blotches, and striped white. Jeanette, rose striped and blotched carmine. Leandre, bright lilac, blotched and striped white. Le Vesuve, fiery red. Meyerbeer, bright vermilion, amaranth blotch. Mons. A. Brogniart, orange-rose, flamed red on white ground. Ondine, white, tinted lilac. Ovide, purplish carmine, blotched and striped pure white. Pyramide, clear, delicate orange rose. Rayon d’Or, yellow-red stripes and purple blotch. Sceptre de Flore, rich rose, spotted carmine. Shakespeare, white, large rose blotch.

List No. 2.—Abricote, clear shining apricot rose, glazed scarlet. Enchanteresse, pale rosy white, lightly striped violet. Fantome, white, slightly glazed, striped rose on edges. Gerbe de Feu, brilliant scarlet, with large creamy white blotch. Gai de Feu, salmon rose, lightly striped with vermilion, ivory white blotch. Grand Mogul, pale cerise red, flaked mulberry, fringed slate. Iolanthe, reddish pink, lower petals white band, and feathered crimson. Mont Blanc, large pure white, long striped. Minos, salmon rose, flushed cherry. Mr. Fowler, pale creamy rose, flaked deep rose. Prospero, pale rosy white, striped carmine. Vicar of Westwell, cerise, lightly feathered crimson.—D., Deal.

APPLES.

STANDARD BEARER V. COBHAM.

I NOTE in your report of the proceedings of the Royal Horticultural Society’s Fruit Committee on February 13th that both Mr. Iggulden and myself were to be asked to inspect Mr. Bannister’s Apple Standard Bearer at Cote House. If residing in the neighbourhood means anything within eighty or ninety miles, I suppose I must be there. I should be only too pleased to give what assistance I could in the matter, so as to arrive at a correct estimate of the variety.

As regards the true Cobham—a variety often spoken about, but very

seldom seen or known—it is now ten or eleven years since I was acquainted with it, or what was supposed to be the true variety. It was an old standard growing on the Holme Lacy estate. The fruits were deeper than typical specimens of the Blenheim, not nearly so well coloured, only containing a few streaks on the sunny side, very even in outline, but rather rough to the feel. In texture it was softer. My opinion is that this variety, if not exactly lost to cultivation, is rarely met with. Cannot someone send specimens of the supposed true Cobham? Too much care cannot be taken in awarding certificates to Apples.—A. YOUNG.

[Our correspondent gives a fair description of Cobham as well as of Standard Bearer. Both varieties mentioned were on the table, but the fruits of the former were not in the best condition. The varieties were not considered to be identical as judged by their fruits, and thus it was that some members of the Committee thought Mr. Iggulden and Mr. Young, as country members of the Fruit Committee, should see the trees at Cote House. Mr. Young gives his experience with the supposed Cobham, and Mr. Iggulden informs us he does not know the variety.]



FARNINGHAM ROSE AND HORTICULTURAL SOCIETY.

WE are requested to state that the annual Exhibition of the above Society will be held this year on Wednesday, the 27th June, at Farningham.

ROSE GROWING UNDER GLASS IN AMERICA.

IN many places in America, according to Mr. G. Nicholson, who gives in the "Kew Bulletin" for the current month an interesting description of his visit to the United States, Roses are cultivated very extensively under glass for the supply of cut flowers during winter. The houses of the most approved pattern are three-quarter span, the short span having a steep pitch to catch as much light as possible in winter. Beds, with narrow walks between, are raised on wooden supports, and in these, which are sometimes not more than 4 to 6 inches deep, are planted out in rows young plants which have been raised from carefully selected cuttings and established in small pots; the distances vary according to the variety used, but on an average they are 9 or 10 inches from plant to plant and 12 or 14 inches from row to row. Bone meal is often mixed with the soil, and as soon as the plants begin to grow freely the surface is mulched.

As a rule the plants are grown but a single season and after that they are thrown away, the old soil being entirely removed and replaced by new in which young plants are again grown. Some growers try two or three varieties a second year, but this is not usual. The varieties most largely grown are the following—Pearl, Clothilde Soupert, Niphotos, Catherine Mermet, The Bride, Madame Hoste, Sunset, F. W. Bennett, and American Beauty. All these must be cut with long stems, a short-stemmed flower would not be accepted by the flower sellers. In a very large Rose-growing establishment near Washington as many as 20,000 Rose flowers have been cut in one day; from this place they are forwarded by mail all over the United States.

GOLD MEDAL ROSES AND THEIR ORIGIN.

I THINK the suggestion made in the *Journal of Horticulture* (page 130) by Mr. Charles J. Grahame regarding these Roses is an admirable one. I know it is recorded opposite their names in the catalogue of the National Rose Society that they are gold medallists of that Association; but it is certainly advisable, as your correspondent suggests, that a page of the catalogue should in future be specially dedicated to the enumeration of those distinguished varieties, giving the names of their raisers, the date of their production and first exhibition, and the respective places at which, when exhibited, they received the highest honour which the National Rose Society could bestow.

If a short description could also be given of the origin of these it would lend, I feel assured, additional value to the catalogue. It is, for example, of some interest to know that Margaret Dickson, one of the most distinguished of gold medal Roses, is a hybrid between Lady Mary Fitzwilliam and Merveille de Lyon, and if such a description were given in condensed language of Mr. Wm. Paul's Salamander, the Messrs. Dickson's Mrs. Grant and Marchioness of Londonderry, the late Mr. Henry Bennett's phenomenal Roses Her Majesty and Mrs. John Laing, and other medallists whose names need not here be recorded, it would doubtless have the effect of making much more attractive the otherwise sufficiently comprehensive publication of the National Rose Society to which I have referred. There are instances in which, of course, not much could be said. Mr. Turner's remarkable Crimson Rambler, for example, is perhaps sufficiently described by saying that it is an exceptionally brilliant and floriferous climbing Rose of Japanese origin and Polyantha extraction; it is, nevertheless, though we know but little of its origin, one of the most beautiful and valuable Roses at present in cultivation.

I have always found the origin or parentage of Roses a fascinating theme; and I know that its importance has not been under-estimated by such successful hybridisers as the late Mr. Bennett, Mr. William Paul of Waltham, Mr. George Paul of Cheshunt, and the Messrs. Dickson of Newtownards, from most of whom the extraction of their most celebrated productions can always be obtained. I may add that when Roses are arranged in a garden, as they always are by me, according to their parentage, they derive from such arrangement an additional significance. If you wish, for instance, to prove that Augustine Guinoisseau is a white La France faintly suffused with delicate rose, grow them side by side, and it will be found that though the former is very widely different in colour from the latter, their form and characteristics are precisely the same. If I had my own way, they would be described in the National Rose Society's catalogue as Hybrid Chinas rather than as Hybrid Teas. I have frequently observed that Baroness Rothschild flowers at the same period as Merveille de Lyon, both being invariably and noticeably late when compared with other Hybrid Perpetuals of coming into bloom. On the other hand the beautiful and exceedingly fragrant White Lady, a native of Waltham, is exactly contemporaneous with the bountiful, early flowering Lady Mary Fitzwilliam, from whom it was derived.—DAVID R. WILLIAMSON.

NATIONAL ROSE SOCIETY.

AT a meeting of the Committee, held February 13th last, the regulation relating to Synonymous Roses, and binding on all affiliated Societies, was altered to read as follows:—

REGULATION 6.—The following Roses which are bracketed together are considered synonymous, and must not be shown in the same stand. For instance, Grand Mogul must not be shown in the same stand as Jean Soupert:—

HYBRID PERPETUALS AND HYBRID TEAS.

{ Alfred Colomb	{ Duc de Rohan	{ Grand Mogul
{ Marshall P. Wilder	{ Mrs. Jowitt	{ Jean Soupert
{ Wilhelm Koelle		
{ Avocat Duvalier	{ Duchesse de Caylus	{ La Rosière
{ Maréchal Vaillant	{ Penelope Mayo	{ Prince O. de Rohan
{ Baron de Bonstetten	{ Duke of Wellington	{ Lady Mary Fitzwilliam
{ Monsieur Boncenne	{ Rosieriste Jacobs	{ Lady Alice
{ Charles Lefebvre	{ Eugénie Verdier	{ Madame A. Lavallée
{ Marguerite Brassac	{ Marie Finger	{ Marie Baumann
{ Paul Jamain		
{ Comtesse de Choiseul	{ Exposition de Brie	
{ Marie Rady	{ Ferdinand de Lesseps	
	{ Maurice Bernardin	
	{ Sir Garnet Wolseley	

TEAS AND NOISETTES.

{ Adam	{ Aloa Rosea	{ Chromatella
{ President	{ Josephine Malton	{ Cloth of Gold
	{ Madame Bravy	{ Souvenir de S. A. Prince
	{ Madame de Sertot	{ The Queen

The climbing variety of any Rose cannot be shown in the same stand with it. For instance, Climbing Devonensis cannot be shown in the same stand with Devonensis.

N.B.—In bracketing varieties together, foliage and habit of growth are not taken into consideration. By order,—H. HONYWOOD D'OMBRAIN, EDWARD MAWLEY, *Hon. Secretaries*.

IRON DOORS FOR GLASS STRUCTURES.

I NOTICE "E. M.'s" objection (page 109) to iron doors for our houses, or rather his illustration of what they might prove to be, by the expansion of the metal. I am glad to offer a few remarks in addition to some advanced by me before—viz., that in these matters, which are extraneous to the profession of a gardener, yet deeply concern us, that we, best knowing what we want, should have a voice in the construction and fitting up of those houses, which accordingly mean to us comfort or discomfort—aye, even success or failure.

I am aware that voice must, from force of circumstances, be to some extent a weak one. We may have the ideas clear enough in our heads, but the channel of technical terms by which those ideas can be floated into other brains is to us a stream of difficulty. Carpenter, mason, bricklayer, or smith have each and all of them a technical vocabulary, which, so far as gardeners are concerned, might as well be Hebrew or Sanskrit.

I have generally found a prevailing idea in the tradesman's mind that we want everything fitted so close—hermetically sealed up as it were. Where heat and moisture affect the materials, there is seldom in new work sufficient margin allowed for these contingencies. With either wood or iron sashbars the glazier, as a rule, fits his frames far too close, resulting in much cracked glass. New doors (wooden ones) are never allowed sufficient freedom at first, because the better the tradesman, be he carpenter or glazier, the closer he fits his work.

Now, "E. M." will think I have gone a long way round to reach the iron doors, and now, having reached them, the difficulty of conveying my idea crops up, clearly pictured as the matter is in my mind's eye, and having been there a good while I do not care to relinquish it. Should it ever be thought worthy of taking a practical form, I could better convey those ideas by a sketch; and if the "patent, imperishable, Eriu-go-Bagh greenhouse door" should become *un fait accompli*, and if the head that holds it has anything to do with hatching it out, I will dare promise that it will have none of the objections feared by "E. M."—E. K., *Dublin*.



THE WEATHER IN LONDON.—A change in the weather has occurred since publishing our last issue. On Saturday, the 17th, it rained more or less all day, but Sunday was fine, cold and windy, and at night several degrees of frost were registered. Monday proved fine, freezing again at night, as much as 14° being recorded in the suburbs of the metropolis. Tuesday also was bright and cold, and Wednesday opened frosty, the thermometer registering 10° at 9 A.M., and local fogs prevailed.

— THE WEATHER IN THE NORTH.—4°, 10°, and 7° of frost were registered on the mornings of the 13th, 14th, and 15th. Rain followed in the evening of Thursday, and Friday was one of the wettest days we have had. Heavy snow fell in the former part of Saturday, but since the afternoon of that day we have had seasonably good weather. Sunday was dull and cold, but fair; and on Monday there was sunshine for an hour or two. Tuesday opened dull and cold, but with no frost. The snowstorm of Saturday was severe in many parts of the country.—B. D., *S. Perthshire*.

— DEATH OF REV. JAMES D'OMBRAIN.—Numbers of readers will share our deep regret on hearing of the death of the Rev. James D'Ombrein, rector of St. John's, Oldham, and eldest son of the Rev. H. H. D'Ombrein, who died on the 11th inst., in his fifty-second year.

— ROYAL HORTICULTURAL SOCIETY—WORKING STUDENTS AT CHISWICK.—Many inquiries being made as to the terms on which working students are admitted to the Chiswick Gardens of the Royal Horticultural Society, the following regulations were issued by the Council of the Society on February 13th:—1, The names, addresses, and ages of all applicants must be laid before the Council, together with the condition and employment of the applicant's father. 2, If approved by the Council the student will have to sign an agreement undertaking to submit to all rules of the gardens, and to give implicit obedience to the Superintendent, and to do any work he may be put to. 3, No student will be allowed to remain more than two years in the gardens without special permission. 4, Every student will pay an entrance fee of £5 before being admitted.—W. WILKS, *Sec. R.H.S.*

— EXPLOSION IN PARIS.—Through an accidental explosion of gas a fire broke out at the business place of Messrs. Vilmorin, Andrieux & Co., Paris, last week. The explosion occurred in the cellars of the premises, and the firemen, in order to cope effectively with the flames, had to go down into the basement with their hose. While they were crowded together in the cellars, the *employés* of the firm mingling with them, a large carboy filled with sulphuret of carbon exploded with a great report. A huge volume of flame burst forth, and spread in a second over the cellar, completely enveloping the mass of men. A sercant of the fire brigade, who was in the forefront directing his men, was killed at once, while eight of the firemen and seventeen of the *employés* sustained burns and other injuries. Several of these are most seriously hurt. All who were able rushed up the stairs, and the alarm being given, a rescue party descended to bring up the wounded.

— TREE PLANTING IN NORTHUMBERLAND.—We are informed that Messrs. Fell & Co., Hexham, have recently planted a large number of trees and shrubs on the Town Moor, Newcastle-on-Tyne. In the three sections planted by Messrs. Fell there were put 1926 specimen trees, consisting of Limes, 10 feet to 11 feet; Sycamore, 11 feet to 12 feet; and Elms, 10 feet to 11 feet; while no less than 8243 trees of sorts have been planted amongst the specimens, comprising Sycamore, Mountain Ash, Elm, Poplars of sorts, and Limes, all 8 feet to 9 feet; and Willows of sorts, 7 feet to 8 feet. Throughout the same three sections a great number of small shrubs were set, including 6630 Oval-leaved Privets and 3950 Golden Elders. In the new section, being planted by the same firm, there are to be planted 300 specimen trees, consisting of Sycamore, 11 feet to 12 feet; and Elm and Lime, 10 feet to 11 feet; and also 1476 trees of sorts, comprising Sycamore, Elm, Limes, Mountain Ash, Poplars of sorts, and Willows, the majority being from 8 feet to 9 feet, and others 7 feet to 8 feet, while the whole will be filled in with 1100 Oval-leaved Privets and 660 Golden Elders.

— GARDENING APPOINTMENT.—Mr. Albert Rowland, foreman to Mr. McKelvie, Broxmouth Park, Dunbar, who has been there for over eight years, has been appointed head gardener to the Marquis of Tweeddale, Yester House, Haddingtonshire.

— QUEEN WASPS.—Mr. C. Bellwood, Leatherhead, sends us a queen wasp which was killed on the 16th inst., and wishes to know if it is not very early, and whether other readers of the *Journal of Horticulture* will say if they have killed any wasps this year.

— THE LONDON PARKS.—At the meeting of the London County Council on Tuesday in last week the Parks Committee reported that the cost of maintaining the public parks under the control of the Council for the year ending March, 1893, had amounted to £82,071.

— CROCUS MINIMUS.—Mr. S. Arnott, Dumfries, writes:—"Unless to prevent the flowers being destroyed by heavy rains Mr. Herbert May (page 128) may safely grow this pretty little *Crocus* outdoors. I have grown it for seven or eight years, and it generally flowers with me in midwinter. It seems, however, to resent being carpeted, and flowers better when the soil is bare; at least, this is so with me."

— CHISLEHURST GARDENERS' SOCIETY.—On Tuesday evening the 13th, Mr. Harvey, gardener to R. B. Martin, Esq., read an excellent paper on the cultivation of "*Camellias in Pots and Planted Out*," before the members of the above Society. Mr. Harvey treated his subject in an exhaustive manner, and he also exhibited a number of fine blooms. A vote of thanks was unanimously accorded to Mr. Harvey for his admirable essay.—R. F.

— MISSING PRIMULAS.—At the Royal Horticultural Society's meeting on the 13th inst. I exhibited a box of my Imperial *Primula* blooms, but regret to say when I went for my box shortly after clearing time it had been taken by someone. I at once made inquiries, but no one had seen the box removed. If they were taken in error by anyone I should be pleased to hear from the person who took them, so that I may know what became of them.—ROBT. OWEN, *Maidenhead*.

— DIPLADENIA BOLIVIENSIS.—This is a charming plant for growing up the rafters of a stove, and for supplying cut flowers, for it is scarcely ever out of bloom. Cuttings put in now in sandy soil, and placed in a propagating case, will soon root, when they may be shifted to 3-inch pots, using fibrous peat, loam, and sand. Keep in a warm, moist atmosphere, and when the roots fill the pot remove into others 2 or 3 inches larger, using a little more fibry loam in the compost. Useful plants may be grown in a season.—R. P. R.

— WILLIAMS' MEMORIAL MEDALS.—We are informed that at a meeting recently held of the Williams' Memorial Fund, Dr. Masters, F.R.S., in the chair, it was decided to offer the following medals during the present year. At the Temple Show of the Royal Horticultural Society, May 23rd, 24th, and 25th, a large silver medal for the best group of *Cypripediums*; at the York Gala, June 13th, 14th, and 15th, a large silver medal for the best group of alpine plants; at Wolverhampton, July 10th, 11th, and 12th, a large silver medal for the best group of tuberous-rooted *Begonias*, in flower; at Edinburgh, September 12th and 13th, a large silver medal for the best table of plants arranged for effect, to be added to the prize offered by the Royal Caledonian Horticultural Society.

— TAUNTON HORTICULTURAL AND FLORICULTURAL SOCIETY.—The annual meeting of the Taunton Dean Horticultural and Floricultural Society was held on Thursday evening in last week under the presidency of the Mayor (Alderman H. J. Van Trump). There were also present Messrs. A. Chapman, E. E. Clemow, H. Fisher, E. Goodman, T. J. Martin, W. Potter, J. Stevens, Theo. Taylor, G. Denham, and Howard Maynard and Alex. Hammett (Hon. Secs.). Mr. Maynard presented the balance-sheet, which showed that the receipts amounted to £773 8s. 6d. The balance from the previous year was £117 12s. 4d., and £161 6s. had been received in subscriptions. The expenditure for the past year was £765 7s. 9d., out of which £258 9s. 6d. had been paid for prizes. Continuing, Mr. Maynard said he thought the balance-sheet was very satisfactory. Although they had not accumulated quite as much last year as they did the year before, yet they had expended considerably more in prizes, and the receipts on the whole would compare favourably with the previous year. Mr. Denham moved that the balance-sheet be adopted. Mr. Stevens seconded, and the resolution was adopted. The Show this year will be held on the second Thursday in August.

— WE regret to have to announce the death of MRS. MARTIN HOPE SUTTON at Cintra Lodge, Reading, after a few days' illness, on the 16th inst., aged seventy-two. Mrs. Sutton was wife of the head of the firm of Messrs. Sutton & Sons, the well known seedsmen.

— THE SPHINCTER HOSE CO.—We are requested to announce that Messrs. F. Reddaway & Co., Limited, of Pendleton, Manchester, have purchased the business and undertakings of this company, whose head offices and show rooms are at 9, Moorfields, London, and the same will be carried on by them.

— TESTIMONIAL TO MR. GEORGE DICKSON.—We hear that Mr. George Dickson, J.P., was presented with a valuable testimonial at a recent meeting of the Chester Committee, appointed to carry out the arrangements for the holding the Royal Agricultural Society's Show in the City last year, in recognition of his services as Honorary Secretary.

— AFRICAN PLANTS.—We learn from the "Botanical Gazette" that Mr. O. F. Cook sailed on October 25th for Western Africa to make further observations and collections of the plants of that region, especially of Cryptogams. He will be gone a year or more. His former voyage resulted in securing a large amount of botanical material, and the present visit is expected to yield even greater results.

— WINTER FLOWERING CARNATIONS.—Mr. W. J. Godfrey, Exmouth, sends us blooms of Mary Godfrey and Reginald Godfrey Carnations, and says that they were cut from plants which have been flowering all the winter. The first mentioned is a grand white variety and the other a salmon pink, both Clove-scented. These useful Carnations were adjudged awards of merit by the Royal Horticultural Society, and a first-class certificate at the Crystal Palace last autumn.

— WOOLTON GARDENERS' MUTUAL IMPROVEMENT SOCIETY.—On Thursday evening in last week, Mr. W. Disley read his prize essay at the Mechanics Institute before a good attendance of members. The chair was occupied by Mr. T. Davies, of the Wavertree Nursery, who also very kindly gave the prize. The subject of the essay was "Plants for House Decoration," with cultural notes. There was a discussion afterwards. A vote of thanks to the donor of the prize closed the proceedings.

— PROFESSOR OLIVER.—The "Kew Bulletin" for February states that an excellent portrait of Professor Oliver, F.R.S., the late keeper of the Herbarium and Library of the Royal Gardens, Kew, has been painted by Mr. J. Wilson Foster, who also painted the portrait of the present keeper, Mr. J. G. Baker, F.R.S., exhibited at the Royal Academy in 1893. Professor Oliver's portrait was commissioned by a number of his scientific and other friends, who have presented it to the Herbarium of the Royal Gardens—the scene of his labours from 1858 to 1890.

— THE GROWTH OF TREES.—A statistical summary with regard to the rate of growth of different species of trees, as observed in the pinetum at Schovenhorst, in Holland, has recently been published. The measurements were made in the years 1878, 1886, and 1892, and deal with 200 specimens. The tree which showed the most rapid increase of size was *Abies grandis*. At 3 feet 4 inches above the ground it was 22 inches in circumference in 1878, 44 inches in 1886, and 69 inches in 1892, while its height was noted as 21 feet 4 inches in 1878, 35 feet 3 inches in 1886, and 50 feet in 1892.

— A FOREST OF CEDAR TREES.—It is probably not known by everybody that there exists in Germany a forest of Cedar trees of such magnificence that they cannot be matched anywhere. Here and there in other parts of the empire, especially along the Rhine, says the "Western Morning News," we come across individual Cedar trees which have flourished for many years as ornamental trees in parks and other places of resort; but the Cedar forest belonging to Freiherr von Faber at Schloss Stein, near Nürnberg, covering 12 or 13 acres of ground, is unique of its kind in Europe, and, it is perhaps safe to say, in the whole world, for even in Florida and Alabama the Cedar tree only appears sporadically in the virgin forests, and never in such numbers together as to make a forest of themselves. Herr von Faber, who stands at the head of the pencil industry of Germany, has for many years past maintained nurseries and plantations of Cedar trees on his land in Bavaria, for which he imports the seed from Florida. The wood of the Cedar tree, as is well known, is very valuable, and indispensable for the manufacture of pencils. Herr von Faber's Cedar forest is in a most flourishing condition, and gives promise of a splendid future.

— A DAILY contemporary asserts that at the last census enumerated about 5000 women who are professional gardeners in this country, and six who are employed in superintending the drainage of towns.

— FLOWERS FROM SCILLY.—It is reported that on one day last week about fifteen tons of flowers were despatched to the London markets. Mr. Watts sent no fewer than 6000 bunches, or 72,000 single blooms, of the Tenby Daffodil, which is supposed to be the largest consignment of any one kind at one time known from a single grower.

— AUSTRALIAN FLOWERS FOR THE QUEEN.—A short time since the Queen received a graceful present from one of her Australian subjects in the shape of some flowers, which were sent over by the steamer "Paramatta." They were so carefully packed and frozen that they were perfectly fresh when they arrived in England. The Queen's kindly acknowledgment of the gift has greatly delighted the good folks of New South Wales.

— RAIN IN THE WEST OF SCOTLAND.—Mr. W. D. Anderson, Ardsheal, Ballachulish, Argyshire, writes to the "Meteorological Magazine":—"The rainfall at this station between October 1st, 1893, and January 31st, 1894, is perhaps worthy of a special record. I append a summary of it:—1893, October, 10·63 inches; 1893, November, 13·25 inches; 1893, December, 7·65 inches; 1894, January, 11·38 inches. Total in four months, 42·91 inches. Average monthly fall 10·73 inches."

— SUNFLOWER PRIMROSE DAME.—Having tried this Sunflower for the first time last year, it is one that I can recommend for growing at the back of a large border, and if placed alternately with the common variety a pleasing combination is the result. Although dwarfer than the old variety, the effect is not lessened by their being grown together. The foliage is also lighter, and the flowers are of a beautiful shade of primrose with a deep velvety disc.—R. P. R.

— THATCH ON GARDEN WALLS.—Whilst travelling last autumn through portions of Dorsetshire and Wiltshire I noticed many walls of kitchen gardens having a coping as it were of thatch, with eaves projecting about 18 inches on each side. I thought it would be interesting to know if this were an advantage or otherwise, and I made some inquiries, but could not get any very satisfactory information respecting it. Perhaps some of your numerous readers may be able to throw some light upon it?—X.

— CANSSELLARYS.—The name "Pattakees," the old gardener's name for *Hepaticas*, given in the pleasing article on "Old-fashioned Flowers" by "E. K., Dublin," on page 122, reminds me of an undergardener's name for *Calceolarias*. This was "Canssellarys." I heard this some years ago, and was so amused that I noted it in my commonplace book immediately on my return home. I fear the young man's prospects of advancement in his calling were not too brilliant.—S. ARNOTT.

— GRANITE SCRAPINGS.—Mr. J. Biles, Ellenboro' House, Roehampton, writes:—"This material is a good substitute for gravel. I have lately been using it for the walks in the kitchen garden. It has a good appearance, and if laid on properly will bind like cement. Living in a locality where gravel is very expensive I could not get it, so tried the scrapings of granite, with which the roads are covered about here. If it is very wet when obtained let the scrapings remain in a heap a day or two to drain. When it can be loaded with a prong is the best time to lay it thinly on the walks. If the weather is fine it will be ready for the roller in the course of a few days. Do not roll it too much at first; put in order, and leave it for a few days to dry a little more, and then give it a good rolling."

— SHROPSHIRE HORTICULTURAL SOCIETY.—We have received a copy of the schedule of prizes offered for competition at the spring and summer shows of this Society. The spring exhibition will be held on April 5th, and the summer one on August 22nd and 23rd. A new class for hardy bulbous flowers, open to nurserymen, has been included in the schedule for the summer show, the prizes in this being £5, £4, and £3. For a collection of fruit, instead of £10, £6, £3 as formerly, the prizes are to be £10, £7 10s., £5, £2 10s., same as for six bunches Grapes. This has been done to make the prizes more equal. For a group of miscellaneous plants the prizes are £20, £16, £14, and £12, and in the class for twenty stove and greenhouse plants two awards are offered, these being £25 and £20. Nearly £720 are offered in prizes altogether.

— **LIVERPOOL HORTICULTURAL ASSOCIATION.**—On Saturday at the William Brown Street Museum, Mr. R. Pinnington gave a paper on "Some Neglected Plants" with cultural notes. The essay was listened to with much attention, the after proceedings partaking more of a chat about many old plants which have nearly gone out of cultivation. Mr. White, the Chairman, Mr. Massey, and Mr. Foster added some useful remarks which were edifying to the younger members present. A vote to Mr. Pinnington proposed by Mr. Elsworthy and a similar one on the proposition of Mr. Massey to the Chairman, brought the meeting to a close.

— **THE EARLY SEASON.**—A Bristol contemporary says:—"The mildness of the season is so remarkable that trees and plants are in leaf and bud to an extent almost unprecedented in the month of February. We have been shown branches of Rose trees, Honeysuckle, Gooseberry, Raspberry, Southernwood, Vervain, Lilac, and the Quince, all of them in leaf; while in many instances Primroses and spring flowers can be seen in bloom. In some cases the Primrose roots are covered with masses of flowers. It is true we are getting strong westerly gales, but if the summer weather starts in March, as it did last year, the winter will be about the shortest on record."

— **MUSHROOMS.**—"W. T., *Blantyre*," writes—"While at the moors last August I found some Mushrooms, superior in flesh and flavour to the common species. They were all dome-shaped, none of them flat, dark brown in colour, and had a nearly black disc from an inch to 1½ inch in diameter on the apex. The flavour was of a sweet nutty nature, and the flesh white. I was told by a person who gathered Mushrooms they were poisonous ones, but replied I had eaten some of them and never found anything in the common ones so luscious. He exclaimed, "My fate was sealed, nothing would save me." The query uppermost in my mind now is, Can the spawn of these be propagated, and be as plentiful as the common Mushroom?"

— **NICOTIANA AFFINIS.**—Mr. John Milne, Kilworth House Gardens, Rugby, remarks:—"Where there is much house decoration to do, a dozen specimens of this sweet-scented and free-flowering plant in the opening months of the year are most useful. A good time to sow seed is at the end of June, pricking them into small pots when large enough to handle, and finally planting them out in good rich soil in the garden. Early in October or as soon as frost renders it imperative they should be lifted with good balls and placed in 7 or 8-inch pots. The stronger they are at the time of lifting the better the after result will be. A cold frame will suit them till the end of the year, when if removed into a temperature of 55° or 60° the flower spikes will begin to push, and will be in flower by the end of January. For dark passages and corridors they are especially useful, as in such positions the flowers keep open all day instead of closing as they do when more in the light."

— **DERMATOBOTRYS SAUNDERSI.**—This is a new and interesting genus of Scrophulariaceæ, which was created by Mr. H. Bolus from specimens supplied by Mrs. Katherine Saunders of Natal, an old and valued correspondent of Kew. A figure and description of the plant were published in "Hooker's Icones Plantarum," t. 1940. In 1892 Mrs. Saunders forwarded fresh seeds of it to Kew, and from these a large batch of plants were raised, which have since been freely distributed. Several of the plants at Kew are now in flower. They are about a foot high, branched, the stems succulent, the leaves fleshy, oblong-ovate, serrated, glabrous, with rose-tinted veins. The flowers are produced in whorls just below the new leaves, each flower being tubular, 1½ inch long, with five regular teeth, the colour outside bright red, the inside yellow. The following information with respect to the habit and peculiarities of this plant has been supplied by Mrs. Saunders, from Eshowe, Zululand, June 27th, 1892:—"Having been staying some time with my son, who discovered the *Dermatobotrys* you kindly named after him, I avail myself of the opportunity of being here in its flowering season, which has lasted already several weeks, to send more specimens of it. In the small box now posted with this I send some roots of the *Dermatobotrys* which have been detached from the tree, upon which it is epiphytic. They are certainly different from the aerial roots of any plants I have seen. Although it grows normally upon trees, it also occurs growing on the ground. I have put in some ripe seeds, which I trust will enable you to introduce the plant into gardens at home, for it would be a great ornament to any garden, both flowers and foliage being handsome." Specimens of this plant in fruit only in the Kew Herbarium were collected by the late Mr. Gerrard in Natal twenty years ago.—("Kew Bulletin.")

BIRMINGHAM AMATEUR GARDENERS' ASSOCIATION.—There was a large attendance of members at the meeting of this Association, held on the 14th inst., at their rooms, 116, Colmore Row. Mr. A. Groves presided. A lecture on Chrysanthemums was delivered by Mr. W. H. Peake. He commenced with the cultivation of the plant from the striking of the cutting, and described the way this was best done. He then explained the mixture of the soil for the various pottings, and the means by which large blooms and specimen plants were produced. He also dealt with the destroying of the various insects most troublesome to these plants. The lecture proved productive of good discussion, and a vote of thanks was accorded Mr. Peake. Messrs. T. P. Cope, C. Daniell, Franklin, W. B. Griffin, Groves, Hartley, W. W. Sanderson, and H. Smith exhibited plants and blooms, making an attractive display.

— **STRUCTURAL IMPROVEMENTS AT KEW GARDENS.**—We learn from the "Kew Bulletin" that the following structural alterations and improvements were made in the plant houses in the Royal Gardens during the past year:—Conservatory. (No. 4).—This house was built in 1792 for "New Holland" plants. The wings were added in 1844-5 by Decimus Burton. The woodwork being decayed, and the smallness of the panes of glass and antiquated arrangements for ventilation being inadequate for modern methods of cultivation, its reconstruction on an improved plan was undertaken by H.M. Office of Works. The central portion was completed in 1892, exactly a century after its first erection, the wooden roof being replaced by an iron one of much lighter and more elegant appearance, and the sashes glazed with wider panes. A lantern ventilator was added. Last year the north wing was undertaken, made 2 feet wider, and the roof raised and a lantern ventilator added. This year it is hoped the south wing will be reconstructed. The house will then be larger, lighter, and in every way better fitted for the cultivation of choice greenhouse plants. Cool Fern Pit. (No. 6A).—The development of the collection of cool or greenhouse Ferns which has taken place within the last five years, and for which the fine cool Fern house (No. 3) was erected in 1892, created the need of a nursery pit for them. This was built last year in the yard adjoining the ferneries. It is span-roofed, 44 feet by 10½ feet, and 8 feet high, and replaces some dilapidated frames. Temperate House.—Slate staging over the pipes has now been substituted for the wood-trellis stage running all round this house, and the plants have since been found to thrive better. Bottom ventilators have also been placed in the wall at the north end for the benefit of the Himalayan Rhododendrons and of the collection of cool Ferns which are planted at this end of the house. Masdevallia Pit. (No. 16C).—This has been reconstructed. It is now span-roofed and on a level with the adjoining ranges of private Orchid pits.

— **HORTICULTURAL CLUB.**—The annual dinner took place at the rooms of the Club, Hotel Windsor, on the 13th inst., and was a most successful gathering. The chair was occupied by Sir J. D. Llewelyn, Bart., and the vice-chair (in the unavoidable absence of the Secretary through domestic affliction) by Mr. Harry J. Veitch. Amongst those present were Sir Alex. Arbuthnot, Bart., Rev. F. H. Gall, Messrs. Walker, Kay, Assbee, Bunyard, Bull, Webber, Leebohn, Wheeler, Cheal, Shea, Selfe Leonard, J. H. Veitch, Martin Smith, Turner, Laing, Rivers, H. Rivers, Girdlestone, G. Paul, Moss, Cousens, Cockett, Featherby, and others. The Chairman proposed the health of Her Majesty and the rest of the Royal Family, and mentioned that the Queen had presented this year a silver cup to be competed for at the meeting of the National Rose Society to be held at Windsor in June. The Chairman also proposed "Prosperity to the Horticultural Club," and spoke in encouraging terms of its present position and prospects. Mr. Harry Veitch, in responding, regretted the necessity of his occupying that position, and urged upon the members of the Club that they should endeavour to enlist new members to fill up the vacancies occasioned by death and other causes. The toast of "The Royal Horticultural Society" was proposed by Mr. Girdlestone and responded to by Mr. Geo. Paul. "The Visitois," was given by Mr. Selfe Leonard, and responded to by Sir A. Arbuthnot. The health of the Chairman was proposed by Mr. Arnold Moss. During the course of the evening an excellent selection of vocal and instrumental music was given under the superintendence of Mr. Geo. Bunyard, to whom and to those who assisted him hearty thanks were given. The table was profusely decorated with cut flowers and plants contributed by Messrs. Veitch & Sons of Chelsea, and Mr. James Walker of Ham; an excellent dessert was also furnished by some of the members, including Grapes from Mr. George Monro, Pine Apples from Mr. Assbee, Californian Winter Neis Pears and English Benheim Orange Apples from Mr. Webber, and Apples from Mr. George Bunyard and Mr. Joseph Cheal, to which gentlemen the Chairman tendered the thanks of the guests.

—THE NATIONAL DAHLIA SOCIETY.—The annual general meeting of this Society was held at the Hotel Windsor on the 13th inst., Mr. E. Mawley presiding. According to the annual report, owing to the drought of the spring and summer Dahlia plants were late in getting rooted into the soil, but the annual Show at the Crystal Palace, though scarcely so extensive as usual, brought together a remarkably fine display of Show and Fancy, Cactus, and Decorative Pompon and single Dahlias of surprising quality. Allusion was made to the great

Herbert Pictor Box, and Hewitt of Stone, Kent. Mr. E. Mawley was re-elected Treasurer, and Mr. T. W. Girdlestone Secretary, and some additions were made to the Committee.

RHODODENDRON MULTICOLOR MRS. HEAL.

THIS is a charming dwarf-growing Rhododendron, and when exhibited by Messrs. J. Veitch & Sons, Royal Exotic Nurseries, Chelsea,



FIG. 23.—RHODODENDRON MULTICOLOR MRS. HEAL.

loss sustained by the death of Mr. W. H. Williams of Salisbury, and to one of the Vice-Presidents, Mr. Samuel Barlow of Manchester. Arrangements have been made with the Crystal Palace Company for the usual exhibitions to take place on the first Friday and Saturday in September, the company making the usual contribution to the prize fund. The receipts from all sources, including a balance in hand, amounted to £155 17s. 6d, and the expenditure, including £119 17s. paid in prizes, left a balance of £9 9s. 2d., but a portion of this was due for prize money unpaid. The President and Vice-President were re-elected, with the addition of the names of Messrs. Joseph Tasker, Brentwood ;

at the Drill Hall, Westminster, on the 13th inst., a first-class certificate was awarded for it by the Floral Committee of the Royal Horticultural Society. It is a hybrid, said to be the result of a cross between R. multicolor and Princess Beatrice, a variety of the javanico-jasminiflorum group. The plants exhibited, and from which the illustration (fig. 23) has been prepared, were only about 9 inches in height, but profusely flowered. The blooms are white, and an inch or so in diameter, and, being freely produced on very small plants, this Rhododendron will doubtless become popular for warm greenhouse and conservatory decoration.



THE JAPANESE CHRYSANTHEMUM ELECTION—A NATIONAL TRIAL WANTED.

THIS is a first-class idea, but the late election has one weak point. The selection was not confined to varieties of which growers had practical knowledge. In other words, some of the varieties occupy high positions more from what report has said about them than from the elector's personal knowledge of their growth. I have an idea that some of the growers who were kind enough to assist in the election included varieties which they had not grown and hardly seen. Among the first twelve enumerated by one grower are three varieties which I have reason to believe he has not yet grown. I have been expecting someone would have pointed out the peculiar positions of Mdle. Thérèse Rey and Mdle. Marie Hoste. In the order of merit among the twenty-four varieties the former stands seventh with thirty-eight votes and the latter fourth with forty votes. In the first twelve varieties Mdle. T. Rey is fourth with thirty-six votes, but Mdle. Marie Hoste drops to position thirteen with only seventeen votes.

Another anomaly of the voting is that Lord Brooke should obtain the thirteenth position with twenty-nine votes in the twenty-fours and only twenty-seventh place in the twelves with five votes, whilst W. H. Lincoln, which is placed fifteenth in the twenty-fours but in the twelves is also No. 15 with eleven votes; also Robert Owen, which is placed below Lord Brooke in the twenty-fours, has more than three times the number of votes than the latter in the twelves. How is it to be accounted for? I notice that whilst Mdle. Thérèse Rey occupies a high position, Madame Calvat, which is of the same set, is not mentioned. Yet my experience is there is not much to choose between them. I am strongly of opinion that next season will unearth some good varieties which at present are ignored, although they have been in commerce at least two seasons.

In the last issue of the Journal I note "Amateur" (page 134) points out that catalogue descriptions are not to be relied on, and the same is also said of the certificates granted by the National Chrysanthemum Society. All this I grant, yet what is the remedy? The descriptions and notes given by private growers or "experts" are not to be wholly depended on, as can easily be seen by turning to the various horticultural periodicals for autumn, 1892.

Growers hardly know what to select among so many novelties. One English trade grower is offering about eighty new ones, and many more growers from half a dozen upwards. Of the continental raisers Calvat offers forty, Delaux about half that number, and so on with others, to say nothing of American cousins, and all these novelties belong to the Japanese section. It certainly would not be difficult to obtain 300 new varieties in this class alone, all and every one of which is promised to be "extra good," a "grand addition," and so on. Who is to test them? Ah! an idea strikes me! Why not the National Chrysanthemum Society do so? It exists for Chrysanthemums and by Chrysanthemums. Why not have gardens or trial grounds as the Royal Horticultural Society? Here let every well known variety be grown, and then comparisons can easily be made. Farewell Aquarium!—OMEGA.

[The "electors" were quite within the terms of reference to name varieties which they had either grown or seen exhibited, and which the successful growers in question regarded as meritorious, such, in fact, as they would themselves grow for showing. With the other subjects of "Omega's" suggestive letter we leave others to deal.]

STOPPING PLANTS FOR TIMING BUDS.

I WAS much interested in an article which appeared in your issue of January 25th (page 76) by Mr. A. Young on stopping Chrysanthemums, and have looked in vain for a further reference to this important question. It is a well-known fact that in many varieties the crown buds are too early to be of any use, and if run on to the terminal are too small for exhibition purposes. For instance, the Queen family, if grown without stopping, will form crown buds too early, and the next or terminal buds will be too small. Now I hold the opinion that these should be stopped from the middle of March to the middle of April (according to the district, whether it be early or late), and the breaks resulting therefrom be reduced to one shoot. This shoot ought to be allowed to grow and break again naturally, from which break take up three shoots, and the first buds that form will be the ones to take.

By stopping thus early the plants have the whole season to recover their strength, and are retarded a fortnight or three weeks, which brings the crown buds to about the right time. This I consider a better plan than rooting the cuttings late in February or March, as recommended by Mr. W. Tunnington, page 133, as the plants are stronger and have a longer season of growth, also more roots to begin with. Other naturally early varieties might be treated in the same way. Last season I had from plants of Vivian Morel, stopped the end of March, blooms which measured 21 inches over, and were perfect in colour and form, which proves to my mind that the method I advocate is the right one in the case of this variety.

On the other hand, late varieties, such as Boule d'Or, Mrs. F. Jameson, and Mrs. E. W. Clark, should be stopped from the middle of April to the middle of May, and when they break into growth, instead of reducing to one shoot, take up three, and secure the first buds that appear. I should like to hear the opinion of other growers on this subject, as I think now is the time of all others when this matter should be discussed in your columns.—J. FERGUSSON, *Manchester*.

WHEN SHOULD CHRYSANTHEMUM CUTTINGS BE ROOTED?

MR. TUNNINGTON'S note (page 133) on late rooted cuttings is well worth discussing. During the exhibition season of 1893 I had the pleasure of meeting him on several occasions in the capacity of fellow adjudicator, and naturally the extraordinary season and its influence on the Chrysanthemum became the topic of discussion.

At Barnsley Show he stoutly upheld his previous publicly expressed opinion of some years back, that it is possible to over-ripen the Chrysanthemum, and that late rooted cuttings, if even rooted in March and April, were likely to give better results than those grown on what is now considered the orthodox system. For the sake of argument I took exception to this dictum as too sweeping an one to make. It so happened that at this show, amongst the competitors, one had come to the front with remarkably good flowers for the district, who at once broke into the argument with a thorough support of Mr. Tunnington's views, and quoted his own successful blooms as a case in point in favour of late-rooted cuttings. In consequence of this many of the bystanders were delighted to see myself so conclusively as they thought bowled over. But thoughtful Chrysanthemum cultivators know well that one point does not prove a case any more than does "one swallow make a summer." It is at here where young and thoughtless cultivators make the mistake, when further reflection would show to them that we cannot afford to dogmatise on any point, except all the factors in the case be weighed and reckoned with.

A knowledge and practice of sound principles of cultivation involving everything conducive to healthy growth, as a matter of course, are of indispensable importance in the cultivation of the Chrysanthemum; but no matter how intelligently applied, will not in these days of keen competition take the cultivator to the highest success. If this knowledge is not supplemented by a thorough study of the constitutional characteristics of each variety in his collection, and the climatic influences of his locality on them, sooner or later he realises that these factors make it impossible to lay down what may be termed any royal road to success, and not until he sees his position in this respect can he be considered to have found his true starting point. The worse his climatic environment, the more decidedly any neglect in this direction will militate against his success. In the cultivation of the plant from year to year he will find that circumstances of which he has no control will necessitate a divergence here and there from previously traversed lines, every season developing unexpected results, by reason of what may be termed climatic variations, so influencing the constitutional characteristics of the different varieties and families, causing them to reveal to us new phases of character which give rise to fresh ideas which we incorporate into our general practice.

Let us take first the climatic influences on the Chrysanthemum, and fix in our minds the fact that we rarely have two seasons alike in atmospheric conditions, amount of sunshine, and temperature. This applies generally; but all the stronger for our argument it scarcely ever occurs that we have two seasons alike during the corresponding periods of the year. Until last season the continual lament of the grower was the want of sufficient sunshine to ripen the wood, as it is technically termed; but the season 1893 taught us the lesson that the constitutional vagaries of the Chrysanthemum had a wider range than we thought, or at least it strongly confirmed any previously formed opinion on the point of over-ripe wood; and there can be no doubt that Mr. Tunnington is right in his argument so far as it applies to certain varieties and families.

Take the Queen family, also some of the medium growers and mid-season varieties in the Japanese class. Last year it was generally noted that the early blooms of the Queen family were exceedingly rough and out of character; in fact, they were so poor, as a rule, that exhibitors rarely staged them, whereas in ordinary seasons, as a matter of course, they overtop the other varieties in both quality and numbers. It would be an interesting point to clear up as to what extent this case is parallel to over-ripe wood accruing from too early propagation of some of the early and midseason varieties, when through loss of foliage the root action becomes torpid, and the natural consequence a poor, thin flower. At this point let us bear in mind that in the cases of under-ripeness, or a bad ripening season following on the bud stage, we get hard monstrous buds which never develop into flowers in their proper character. This proves that in the Queen family a very limited margin to play upon between this unripe and the over-ripe condition, the latter the result of too much sunshine or too early propagation, as the case may be.

Starting at one end of the scale with the varieties which naturally have a constitution adapting themselves to our ordinary seasons we come to those which are constitutionally beyond our scope in cultivation, because our climatic conditions (on account of their gross constitution) are not suited to bring them into condition necessary to the blooming period as preliminary to the seed-bearing stage, the chief end and aim of Nature; or, put in other words, they are not ripe to this end. Let us now place our variable climate in one scale and the great

diversity of constitutional range of susceptibility to blooming influences of the plant in the other scale, and bear in mind that although it has a definite system of blooming—or it may be attempting to bloom—it is somewhat at variance with the systems obtaining in other plants which flower during greater length of day and sunshine; whilst the Chrysanthemum has to contend, as it were, against the waning or dying influences to flowering which other plants escape, and again add to these complicating effects on the plant that the unnatural and forcing system of cultivation intensifies the whole game of cross purposes. It will be evident, then, that whatever system of cultivation is adopted we are brought face to face with circumstances over which we have no direct control, and we may compare the case to the captain of a ship trying to make his port against adverse winds. Yet he knows that if he cannot get into port on one tack he will do so on another. So it is with the Chrysanthemum grower, who, knowing what port to steer for, will use his best judgment in grappling with the obstacles which beset him. Very often a ship will have to shape her course, and take her bearings by some prominent landmark before she can come safe into port. The Chrysanthemum grower is under similar conditions, and the landmark which he must steer for is to time his buds of the different varieties so that each of them may have, as far as possible, such a season as is suitable for their full development.

But what is also of quite as much importance at this critical point is that the plants should also be in a suitable condition as to ripeness, neither too grossly vigorous nor too ripe on the other hand. In the first case the cultivator will be called upon to note closely the condition of the gross and slow developing varieties, and bring them into subjection. They should be propagated or stopped so that a sufficient length of time is given them to make an instalment of growth from the stopping stage to the bud-showing stage, to show the bud at such a time as may be suitable for its full development. The gross habit should be modified by restricting their root room and judicious holding back of stimulating manures in the early part of the season. In our neighbourhood (Wakefield) the difficulty is to get this class of Chrysanthemum ripe enough. In reference to those sorts which are liable to become too ripe, later propagation and avoiding anything in the way of a check to the energies of the plant, not only during the early stages of growth, but the root action should be vigorously maintained quite up to the full development of the flower, good top-dressings being very advantageous to this end.

It will be evident from the foregoing remarks that whatever system may be adopted we shall have these complications of season and constitutional variation to contend with, so that it is quite within reason to say that what turned out to be a success with the late rooted plants last year might not occur the coming season, because the conditions may be changed so far as to greatly modify the results. But yet as we are all seeking truth rather than the vain idea of upsetting the practical conclusions of so eminent an authority as Mr. Tunnington let us look at the question from the other standpoint. We are bound to acknowledge that grand blooms have been produced on the system Mr. Tunnington advocates, and it would be the height of folly to miss any chance of improving the exhibitor's position on the show-boards, or neglect any opportunity of improving the cultivation of the flower. It will be evident, however, in the face of the complications which I have attempted to define, that in formulating a line of practice based upon the later propagation of the plant we should be bound to meet them systematically, so that the buds are well timed, as is done on the present system.

Any method of culture endorsed by Mr. Tunnington is bound to carry with it great weight, and what I have written may be considered more in the light of drawing him out on the question rather than to be taken as directly antagonistic to it. The strength of his position lays in the fact that root action and growth are more vigorous, and the latter made under better conditions than those plants which have been dragging on through the dark winter days. Yet without Mr. Tunnington further shows his hand by giving more details, which are desirable, we shall have to rest content by adopting his suggestion as a supplement to the present system.—THOS. GARNETT.

OLD AND NEW CHRYSANTHEMUMS.

MR. LEES (page 133) has anticipated me. Having the photograph of the stand of forty-eight blooms distinct varieties that finally won for the late Mr. Harding, gardener to F. D. Galpin, Esq., Putney, the first Kingston challenge cup in 1882 before me every day, I thought the publication of the names of the varieties at this particular time would be very interesting. Mr. Lees has given the names of the Japanese varieties that Mr. Molyneux exhibited, and which won the second Kingston cup in the following year, 1883. These are varieties now a long way in the rear, but on reference to Mr. Harding's stand it will be seen that it did not even include that ideal Japanese Boule d'Or which was introduced and very well shown by Mr. Molyneux in his first competition for the cup in 1882.

Mr. Harding's stand consisted of:—Incurved—Queen of England, Golden Empress, Princess Teck, Le Grand, Hero of Stoke Newington, Mrs. Halliburton, Pink Perfection, Novelty, John Salter, Princess of Wales, Nil Desperandum, Lady Hardinge, Jardin des Plantes, Prince Alfred, Venus, Alfred Salter, Mrs. Heales, Golden Queen of England, Princess Beatrice, Mr. Brunlees, Mr. Bunn, Empress of India, Empress Eugénie, and White Venus. Japanese—Elaine, La Nympe, Bouquet

Fait, L'Incomparable, Fulgore, Triomphe de Châtelet, M. Ardene, Criterion, Marguerite Marrouch, Mdle. Moulise, Garnet, Plantagenet, Thunberg, Curiosity (?), M. Plancheau, Baronne de Prailly, Fair Maid of Guernsey, Comte de Germiny, Madame Burnet, Comtesse de Beauregarde, Dr. Masters, Madame C. Audiguier, Fanny Boucharlet, and Bronze Dragon.

About half of the incurved varieties are still indispensable for exhibition, but the Japanese shows a wonderful evolution in eleven years. The six blooms of Madame C. Audiguier shown by Mr. Molyneux at that time at Kingston astonished us. Who, indeed, would have thought then that it would have been superseded and out of date in such a short space of time? One can imagine what a sensation a stand of Ed. Molyneux, Vivian Morel, or Col. W. B. Smith, such as was exhibited at some of the leading shows last year, would have caused.—C. ORCHARD, *Bembridge, I. W.*

IN no flower has such a remarkable change come over the selections of varieties in half a dozen years as in the case of the Chrysanthemum. Although all sections are affected by the introduction of new varieties annually, it is amongst the Japanese particularly that the substitution of names has taken place so largely. There are three reasons to be noticed for this extraordinary change of variety. First, the newer sorts are so much superior to older ones; secondly, they can be so easily raised from seed; and lastly, there is such a demand for novelty nowadays, that persons so much interested in new sorts, whether from financial aims or a love for the flower, procure them immediately.

Taking the Japanese section first, of the leading forty-eight varieties six years ago not more than three or four can now be found on the exhibition table. This is a distinct proof of the rapidity of the increase and appreciation of the newer raised varieties. Boule d'Or, Mdle. Lacroix, and Val d'Andorre are the three that are at all to be seen. The former has perhaps stood its ground longer than any other sort in existence. As a rule where one variety has gone out of cultivation, as it were, certainly from the show tables, others have come to take their place. Not so, however, in the case of Boule d'Or. This is now declining as an exhibition variety, but not because it has been ousted by the superiority of a rival. At the present time we have not one of the same character to fill the gap which must necessarily occur when this somewhat peculiar formed flower has been seen for the last time in the exhibition building. True, there are plenty of yellows, but not one with the formation of floret that this has. The constitution of this Japanese variety introduced by Bernard nearly twelve years since is gradually becoming weaker. Why, it would be difficult to say, but the fact remains the same.

Take another example—Madame C. Audiguier, introduced by Marrouch in 1879. This once highly prized variety is hardly ever met with now-a-days. It was not because the public were tired of seeing the silky, mauve florets arranged like loose basketwork, or that cultivators grew tired of a plant that grew so tall. It was purely a question of constitution. No variety was easier to produce good blooms from than this. I am aware though that its extreme height was not favourable to retention, but I know that an exhibitor will contend against much that is inconvenient if good blooms can be assured of deserving and popular varieties.

Comparing the varieties of the present day with those of the time stated we are very much to the good in the matter of form and colour, the principal points to observe. In the place of Madame C. Audiguier we now have Waban, Mrs. C. H. Payne, Etoile de Lyon, and Viscountess Hambledon, all somewhat similar in colour. Belle Paule is superseded by Madame Octavie Mirbeau, Fair Maid of Guernsey, Meg Merrilies, Mdle. Lacroix, Elaine, and Mons. Astorg by Mdle. Thérèse Rey, Florence Davis, Avalanche, and Stanstead White. In dark colours, where we were wont to recognise J. Delaux, Marguerite Marrouch, L'Africaine, M. Delaux, and Père Delaux, we have Edwin Molyneux, Wm. Seward, J. Shrimpton, and Elmer d'Smith. Incurved blooms like Comte de Germiny—a long time a favourite—we now have Mrs. C. Wheeler, Beauty of Castlewood, Lord Brooke, Mrs. E. W. Clarke, Louise, and Thomas Hewitt, a most decided gain.

When we come to yellows to replace Boule d'Or, Golden Dragon, Thunberg, Peter the Great, and Grandiflorum we depend upon Sun-flower, Golden Wedding, W. H. Lincoln, C. Blick, Mrs. F. A. Spaulding, and Le Prince du Bois—a decided gain. To replace the lilac, rose, and mauve flowers represented by Baronne de Prailly, Fernand Féral, Madame de Sévin, Bouquet Fait, Dr. Macary, Balmoreau, and Mons. Tarin we can easily and with confidence depend upon Vivian Morel, G. C. Schwabe, W. Tricker, Excelsior, President Borel, Eda Prass, Violet Rose, Miss D. Shea, Alberic Lunden, Le Verseau, and Madame E. Rey. In bronzes, to replace Criterion, Val d'Andorre, Duchess of Albany, L'Adorable, Triomphe de la Rue des Châtelets, Japonaise, Madame B. Rendatler, and Flamme de Punch mention may be made of Charles Davis, Colonel W. B. Smith, Lord Brooke, Mrs. F. Jameson, Gloire du Rocher, and W. W. Coles.

Varieties pale pink or bluish in colour are worthily represented by Mdle. Marie Hoste, Puritan, Miss Anna Hartshorn, Mrs. E. D. Adams, Vice-President Audiguier, Mrs. Beckett, International, Rose Wynne, Mrs. E. Whittle, and Lilian B. Bird in the place of La Nympe, Mrs. Mabood, Hiver Fleuri, M. Burnet, Fanny Boucharlet, Sarnia, and Madame Deveille. Many more varieties might be named, but enough has been said to show the great progress that has been made in so short a period as seven years.—E. MOLYNEUX.

NATIONAL CHRYSANTHEMUM SOCIETY.

ON Thursday evening in last week a meeting of the General Committee of this Society was held at Anderton's Hotel, Fleet Street, when the chair was occupied by R. Ballantine, Esq. It was announced that at the annual meeting Mr. E. C. Jukes, who has long acted as Vice-Chairman of Committees, would tender his resignation, he being compelled to do so on account of local work which took up much of his time. The Secretary reported that special prizes, in addition to those mentioned in our last report, would be offered by Major Collis Browne, Mr. H. J. Jones, Mr. Robt. Owen, Mr. J. Smith, Mr. Restall, and Messrs. Cannell & Sons.

In 1894 meetings of the General Committee will be held on 3rd September, 8th and 29th October, 19th November, and 10th December. The financial statement and report were then submitted, by which it appears that the total revenue for the year 1893 was only about £50 less than in 1892, a point of some consideration when it is remembered that last year in commercial circles is generally regarded as one of the worst for many years. Members' subscriptions amounted in 1893 to £237 2s. 3d. as against £209 15s. 7d. the year before. The reserve fund at the close of the year stands at £55 2s., the total on the credit side of the account being £893 0s. 1d. The expenditure is headed by prize money paid to exhibitors amounting to £436 5s. 6d., of which £14 7s. 6d. was awarded at the September Show, £44 8s. 6d. at the October Show, £276 19s. at the one in November, and £37 2s. 6d. being the amount awarded at the December Show. The other items are similar to those which appear in previous balance-sheets.

The draft report, in reviewing the past year, says it was remarkable for the growth of new Chrysanthemums and the large number of exhibitions held at home and abroad, and for the high character of the competitive groups. These have brought about a large increase in the membership, 157 new names having been added to the Society's list and six societies affiliated during the year. Competition at the November Show was very keen, as an instance of which it may be mentioned that in the class for twenty-four cut blooms of Japanese there were no fewer than nineteen competitors.

The meetings of the Floral Committee during the past season have been well attended and have maintained their interest, the number of novelties submitted being beyond all previous experience. The educational work of the Society has also been furthered by the reading of the papers by Mr. C. Pearson and Mr. C. E. Shea, which will duly appear in the new schedule.

Several new members and affiliated societies were admitted, and most of the other business was of a purely formal nature.

On Monday last the annual general meeting of the members of this Society was held at Anderton's Hotel, Fleet Street. There was a good attendance and much interest taken in the proceedings, which were presided over by Mr. R. Ballantine. The financial statement and report for 1893 were submitted and agreed to. The number of members on the roll for the past year was upwards of 600, and the amount received for their subscriptions greater than in former years. The Secretary alluded to a reference made at the last Committee meeting as to the percentage of money paid in prize money, and thought the amount would compare very favourably with that paid by other leading societies. The cost of the National Chrysanthemum Society's exhibitions had absorbed £610, leaving about £180 for working expenses. He mentioned that about sixty per cent of the actual income went in prize money and medals, twenty per cent. in expenses of shows and the Floral Committee, and the remaining portion in the form of working expenses. During the year nine affiliated societies withdrew, but seven others had joined, in addition to which four new ones had applied for affiliation since the beginning of the year.

The election of officers next occupied the attention of the meeting, with the following result: President, Sir Edwin Saunders; Vice-Presidents the same as before, excepting the three whose names are removed by reason of death, viz., Lord Ebury, S. Barlow, Esq., and E. Sanderson, Esq.; the additional Vice-Presidents added in their place being C. E. Shea, Esq., E. C. Jukes, Esq., and F. A. Beavan, Esq. Mr. J. R. Starling, who withdrew his resignation at the urgent wish of the Committee, was again elected Treasurer; Mr. R. Ballantine, the Chairman of Committees; Mr. Brian Wynne, Vice-Chairman; Mr. Rd. Dean, Hon. Secretary; and Mr. Harman Payne, Foreign Secretary.

Mr. Wynne moved that the best thanks of the Society be accorded to Mr. E. C. Jukes, on his retirement from the post of Vice-chairman, for the invaluable services he had rendered to the Society, and that the vote be engrossed on vellum and presented to that gentleman as a slight acknowledgment of his services. The motion was seconded by Mr. Ballantine, and was carried unanimously.

The election of one-third of the General Committee who retire in 1894 was then proceeded with, and other members to fill up places caused by resignation or acceptance of office. The following were the successful competitors:—Messrs. Bingham, Long, Newton, W. H. Lees, Hammill, Mease, Moorman, Waterer, Hicks, Needs, Reeve, Sanders, J. Williams, and Witty.

The Secretary reported that the new schedule was already in type, and that the paper by Mr. Shea on judging will not be discussed until the schedule is printed and distributed, so as to allow members the opportunity of fully considering it.

Eleven new members were elected, and the proceedings closed with a vote of thanks to the Chairman.

HARDY FLOWERS.

ON January 12th, 1893, there appeared in the Journal a request from me that the leading growers and exhibitors of herbaceous plants would send me lists of what they considered the best of these plants for exhibition at and from the last week in June. Only one list arrived at the office of the Journal, Mr. Hesselwood's; but this was especially useful to me as coming from quite the North of England. Other lists were sent to me privately, but rather late to be of much practical use for that year. Moreover, just as I was tabulating results I was called away from home for some weeks. When I report such names as the Rev. W. Page Roberts and Mr. Burrell of Cambridge, the amateur and trade champions of East Anglia respectively, as exhibitors of these charming and useful flowers as among those who have sent me in their opinions, I think your readers may with confidence appeal to the forty-eight names to be found below. Other nurserymen, too, I must mention, one whose knowledge of hardy plants is perhaps second to none in England, Mr. Prichard of Christchurch, and Messrs. Dicksons of Chester.

I trust the list I now give will be in time to be a sort of guide to some who wish to buy in now, but who are a little in doubt as to selection. The names are given alphabetically to enable your readers to compare with the trade catalogues the more readily.

Achillea Ptarmica plena (The Pearl)	Gladiolus Colvilli (The Bride)
Aquilegia cœrulea or glandulosa	Hemerocallis Thunbergi
Alstrœmeria (chilensis and aurantiaca)	Hesperis sanguinea
Bupthalmum salicifolium	Harpalum rigidum
Catananche cœrulea	Inula glandulosa
Campanula persicifolia alba grandiflora	Lychnis chalcedonica
Campanula grandis alba	Lychnis Haageana
Centaurea macrocephala	Lathyrus rotundifolius
Centranthus rubra	Lathyrus latifolius albus
Chrysanthemum maximum	Lathyrus splendens
Cephalonia a pina	Lilium pardalium
Coreopsis grandiflora	Lilium umbellatum
Coreopsis lanceolata	Lilium croceum
Delphiniums (especially belladonna)	Malva moschata alba
Delphinium nudicaule	Morina longifolia
Erigeron speciosus superbum	Monarda didyma
Eryngium amethystinum	Oenothera speciosa
Eremurus Bungei	Oenothera Youngi
Echinops Ritro	Papaver nudicaule
Gaillardia	Potentilla
Galega officinalis alba	Rndbeckia californica or Newmanni
Geum coccineum fl.-pl.	Scabiosa caucasica
Gypsophila paniculata	Spiræa aruncus
	Spiræa filipendula fl.-pl.
	Tuallitrum flavum glaucum

Next week I hope to send a few notes on the subject, on the classing of varieties and kinds, also on the wording of schedules of exhibitions.—J. A. WILLIAMS.

ROYAL HORTICULTURAL SOCIETY.

FEBRUARY 13TH.

SCIENTIFIC COMMITTEE.—Present: R. MacLachlan, Esq., F.R.S. (in the chair); Rev. W. Wilks, Dr. H. Müller, Dr. Masters, Messrs. Cheshire, Jenner Weir, Michael, and D. Morris.

Edible Tubers.—Mr. D. Morris exhibited specimens of an edible tuber recently imported into the London markets from the Azore Islands. The tubers are cylindric, obtuse, about 2 inches long, as thick as the thumb, brilliant crimson externally, and with thickened leaf scales at regular intervals over the surface. Mr. Morris considered the tubers to be those known in Peru under the name of Oca, and produced by *Oxalis crenata*. Numerous varieties of Oca, differing in size and colour, are grown in New Granada, and their tubers are much esteemed as esculents.

Primula capitata and Basal Rot in Daffodils.—In reply to a question from the Rev. C. Wolley Dod as to the decay of *Primula capitata* at the crown without the formation of a winter bud, and which was submitted to the Director of the Royal Gardens, Kew, the following answer had been received:—

"This species of *Primula* always dies after flowering freely. *P. Poissoni*, *P. imperialis*, and several others, behave in the same way under cultivation. Possibly the plants could be kept alive by preventing them from flowering. Basal rot in Daffodils is, we believe, caused by lifting the bulbs before they have finished growth, or by bad treatment whilst they are out of the ground.—W. T. T. D., November 30th, 1893."

Mr. Wilks dissented from the view of the cause of basal rot in Daffodils, being of opinion that the trouble is much more frequent when the bulbs are left in the ground all the summer, than when they are lifted.

Potatoes and Sulphate of Copper.—The Superintendent of the garden of H.H. the Nawab Bahadur of Mursh dabad, reported that the Potato crop at Roesbagh and in Mabarak-Manjil had totally failed. The failure was attributed to heavy rain, and partly to the application of sulphate of copper. In the opinion of the Committee the proportion of copper-salt made use of was too large, especially as it was used in a free state and uncombined with lime. The result was, the plants suffered from the caustic effect of the salt.

American Blight.—Mr. H. R. Dugmore inquired if there was any approved method of preventing the different species of blight

ascending from the soil as in the case of American blight on Apples' mealy bug on Vines, and scale on Acacias. It was suggested that the grease band employed by Mr. Wilson and others in the case of the winter moth, might be tried in addition to the methods usually adopted of dealing with these pests.

SOME THOUGHTS DEVELOPED.

IN perusing the pages of the *Journal of Horticulture* week by week various thoughts and ideas, valuable and valueless, force themselves unconsciously upon the mind, which for a moment brings the eyes of readers to a standstill, and thus enables the mind to drink more deeply of the subject which so suddenly arrests the progress of vision. Truly these are thoughts that when expressed become fully developed. The issue before me (February 1st) appears so full of interest, and the organs of vision so frequently arrested, that the mind becomes for a time intoxicated as it were, and this is my excuse for penning these few thoughts.

Commencing with Mr. G. Abbey's exhaustive article upon "Fertilizers for Small Fruits" (page 83), we cannot do otherwise than admire the masterly style in which the subject is handled. How clearly he defines the benefits derived by a judicious use of "commercial fertilizers!" Yet one point in particular strikes me as somewhat singular—viz, that throughout his admirable article he appears to ignore the wonderful fertilizing properties of lime, which is really "the key for unlocking the hidden treasures of the soil." To quote the authority of Mr. John Hughes, F.C.S., "on clay soils it has a wonderful effect in decomposing the insoluble silicates of potash and rendering them available as plant food." On peaty land or rich vegetable soils it corrects excessive acidity and promotes the formation of valuable nitric acid compounds. This surely entitles it to a place amongst "commercial fertilizers." Mr. Abbey, without doubt, has some reason for omitting this valuable and necessary constituent.

Allow me to compliment "E. K." upon the lucid and life-like painting of bygone probationary days, "Temperance and Temperatures" (page 84). How strictly exacting many of our old masters were! How unnecessary arbitrary many of our gardeners are, even of to-day, regarding their uniformity of temperatures, imposing hardships upon the young men, and unnecessary expense upon their employers! But the wave of prudence, humanity, and common sense, I am glad to say, is in the ascendancy, and social problems in the grand old regiment of gardeners are being recognised. Let temperatures inside be regulated by temperatures outside, and the result will prove essentially beneficial to all concerned.

Taking my friend Mr. Bardney's article (page 83) upon "Mulching Outside Vine Borders," I am practically in accord with his ideas, having thoroughly proved the injurious effects of heavily mulching Vine and fruit borders generally during autumn and midwinter. Yet I claim exception on one point, outside borders of early vineries, where Grapes are expected to be cut early in May. The method I have adopted successfully for the past four years has been to cover the outside border with 18 inches of good strawy manure fresh from the stables, then place corrugated zinc upon the top to retain heat and prevent the border becoming saturated. This covering is allowed to remain six weeks, then removed and more similar material replaced; this is finally removed at the end of February and a slight covering scattered over every evening to retain the heat absorbed during the day. Mr. Bardney places too much stress upon his rules of frost being absolutely necessary to induce perfect rest, and even goes so far as to ask "Why Vines should be exempt from these rules?" Because early Vines are usually in full growth when that powerful and silent mother of Nature puts her children to rest. Further, we will anticipate a severe winter, with early Vine borders practically unprotected, and frozen to a depth of 8 inches, or even a foot, which is quite within reason; the temperature inside 65° to 70°, with growths 6 inches to a foot in length. Would one be surprised to witness signs of distress in the foliage with each burst of sunshine? Would free access of air (which Mr. Bardney points out as absolutely essential!) penetrate the frozen borders and fill the lungs of the Vines? The borders of Vines and fruit trees which start into growth naturally with the season are greatly benefited by exposure to frost, and experience has taught me to discard mulching to the end of March or early in April.

Turning to Mr. D. C. Powell's essay on Pears (page 92) we find several points open to objection. His ideas respecting subsoils are certainly in one instance the opposite of mine. To quote his own words we read, "the subsoil should be neither loosened nor manured." I fully endorse the evil of placing manure at the bottom when planting any kind of fruit trees, but I would strongly urge upon intending cultivators the necessity of thoroughly breaking up the subsoil before planting, not as an inducement for the roots to penetrate into the subsoil, the latter is easily avoided, but for the purpose of ensuring perfect drainage, without which no fruit trees can flourish for any length of time. After breaking up the subsoil, a layer of cinder ashes scattered over will effectually prevent the roots penetrating forbidden regions.

One question I may be allowed to ask respecting summer pruning. Does Mr. Powell infer that by pruning the growths of Pears in July and August flower buds would be fully developed on the same season's growth for fruit-bearing the following season? If so, I am again at variance with his dictum. I am an advocate for summer pruning, believing it embodies the secret of continued fruitfulness in Pears and

other fruits; yet many young cultivators have been led to believe that summer pruning is only to be adopted to produce abundance of fully developed flower buds the following season. True, summer pruning does considerably advance the buds, but we do not reap the true reward until the second season; occasionally we find a variety of Pear which produce flower buds on the same season's growth. My reason for touching upon this point is principally to dispel any misunderstanding in reading Mr. Powell's essay, which certainly carries the impression that by pruning the growths in July and August we are rewarded by fully developed flower buds in place of lateral growths.—F. DUNN.

TECOMA JASMINOIDES.

ALTHOUGH by no means a new plant, *Tecoma jasminoides* (fig. 24) is unknown in some gardens. When properly managed it is a beautiful plant for greenhouse decoration, and is usually much admired. The



FIG. 24.—TECOMA JASMINOIDES.

flowers are produced freely, and vary from white with a rosy centre to a uniform pink hue, differing in the brightness of tint, and some of the best marked of these variations have received distinctive names. The plant succeeds in a compost of turfy loam, peat, and sand, or good leaf soil can be substituted for the peat if more convenient. Planted out it grows freely, but it also thrives in a pot, needing thorough drainage in any case.

FORCING NARCISSUS TELAMONIUS PLENUS.

WE think it quite unnecessary to answer Mr. Bardney's (page 124) points away from the above. We will give to the Royal Gardeners' Orphan Fund £5 if Mr. Bardney can show a box of the size mentioned of Daffodil bulbs from which 450 flowers have been picked. Quoting from Mr. Bardney's letter (page 88), "It can be forced nearly as well and as early as the Roman Hyacinth. The treatment given to Roman

Hyacinths is all that is needed." The above is the portion of Mr. Bardney's note which we consider very unreliable. Let any of your readers place the Daffodils into the forcing house in September, and treat the same as Roman Hyacinths for first bloom, and they will, alas! soon discover the result of misguided information. He admits that many bulbs are ruined by the method they are forced, and he himself has suffered (and we may add so have we), and notwithstanding launches out such unreliable treatment.

Had Mr. Bardney stated in his first letter that it would not be safe to endeavour to have them in flower before Christmas as the result might be many blind buds, then we would agree with him. As to his 150 flowers the first week in January, on reference to our nursery book we find that our earliest bulbs of *N. obvallaris*, about 12,000, were placed out of doors on the 16th of January, having finished flowering, first picking flowers on December 24th. On the 4th January we commenced picking *Telamonius plenus*, and we do not consider it safe to venture to get them in flower earlier, or the result would probably be a few blooms and numerous blind buds. As regards the quality of our flowers we are perfectly satisfied. To expect a good return from any market the flowers must be of first quality.

We think that we have, as well as Mr. Bardney, closely observed the forcing capabilities of Daffodils. We herewith send a bunch of *N. poeticus ornatus*, the last picking of 50,000, which we commenced picking on January 16th. Perhaps the Editor would state length of stem, diameter of flowers, and note the quality of the blooms. Our only object in writing was to prevent possibly many gardeners and amateurs placing their Daffodils in the early forcing house with Roman Hyacinths. By Mr. Bardney's letter we certainly understood that Daffodils could be had in flower as early as Roman Hyacinths, or even supposing he wants to add "nearly," October and January can hardly be called near one another.

As before remarked, we will give £5 to the Royal Gardeners' Orphan Fund if Mr. Bardney produces a box of Daffodils in flower, Tenby or *Telamonius plenus*, in October next, just to endeavour to prove that we are not so ignorant of facts as Mr. Bardney is under the impression.—COLLINS BROS. AND GABRIEL, *Hampton*.

[The flowers of *Narcissus poeticus ornatus* received were very fine indeed—diameter, 2½ inches; length of stems, 18 inches; girth, six-eighths of an inch; leaves vigorous and deep glaucous green.]

THE TENBY DAFFODIL.

THE mention of *Narcissus obvallaris* by "Tenby," on page 125 of the last issue of the *Journal of Horticulture*, in respect to its adopted name, affords an opportunity of making an observation concerning the Tenby Daffodils. *N. obvallaris* is now generally regarded, and is represented in the catalogues of prominent trade growers as being the Tenby Daffodil, but the question arises whether it is the original one.

Your correspondent states that doubtless the bulbs were originally imported, and that in the neighbourhood of Tenby a few years ago they flourished in great luxuriance. It may be that the delightful picture of them crowding in cottage gardens and the hedgerows of the locality occasioned in later years a misapprehension that became more deeply rooted when, undisturbed by the demands of fashion, they multiplied so exceedingly. This, too, may perchance have favoured their usurping the popular title of a relative, for no less an authority than Howarth in his monograph defines the Tenby Daffodil as *Narcissus lobularis*.—JOHN E. JEFFERIES, *Oxford*.



FRUIT FORCING.

Pines.—*Plants Starting into Fruit.*—Those plants which were selected about the beginning of last December, and started by an advanced temperature and moisture, will now be showing fruit. As it is advisable to enhance the ripening of the fruit of these plants as much as possible, the temperature about them may be maintained at 65° to 70° at night, and 75° to 80° in the daytime under favourable circumstances, ventilating at 80°, allowing an advance to 85°, and close about that figure. With the fruit advancing the plants will require more water at the roots, examining the whole stock once a week, as with increased light and heat the need for liquid will correspondingly increase. It must not, however, be applied indiscriminately, but only to such plants as need a supply, always in a tepid state and with a little stimulant in it, as guano or some approved fertiliser. Recently started plants to succeed those already named should have a night temperature of 65°, and 70° by day artificially, which will be sufficient for them for some time longer.

Starting Suckers.—Suckers will have to be started about the commencement of March to provide plants to give a succession of fruit from next December onwards. Therefore attend to the preparation of the soil for potting, and a fermenting bed in some close structure to generate and maintain a bottom heat of 85° to 90° near the surface, and with means of maintaining a temperature of 55° to 65° by fire heat with regularity.

Vines.—*From Eyes.*—Buds inserted as advised have rooted, and if in small pots they may be shifted into a larger size as soon as the roots reach the sides, standing the pots on slate or tile shelves over hot-water pipes in preference to plunging them in bottom heat. If the eyes were inserted in pots or pans several together, they may be placed in small pots singly, plunged in bottom heat to insure speedy root action, and when the roots reach the sides transfer them to 6-inch pots. Syringe well amongst them, and stop those intended for fruiting at the first joint of the laterals, but those intended for planting out this season, whether grown in pots or turves, may be allowed to retain all the growth made.

Early Vines in Pots.—These must not sustain any check through dryness. Top-dress with rich turfy loam and decayed manure in about equal parts, placing rims of zinc or lead 3 or 4 inches deep round the tops of the pots, or if the pots have fermenting materials extending to the rim, strips of turf about that thickness should be laid so as to form the necessary dish. When the roots are working freely in the top-dressing sprinkle a little approved fertiliser on the surface occasionally. Afford liquid manure a few degrees warmer than the temperature of the house in which they are growing, applying it also to the turf placed around the rim of the pots, likewise the plunging material where the roots are allowed to find their way from the bottom of the pots, there being nothing like plenty of feeders to secure well-developed berries. In order to concentrate the sap on the berries keep the laterals below the bunches somewhat closely stopped, allowing more liberty to those above them; but avoid overcrowding the trellis with foliage that cannot have full exposure to light. With the Grapes approaching the stoning process careful treatment is necessary. Ventilate early in the day, affording a little air at 70°, increasing it with the heat to 85° with sun, closing at 80°, and if the temperature advance to 85° or 90° all the better. Avoid cold draughts, as they are prolific of rust, and impair the assimilating power of the foliage. If red spider appear employ a little sulphur on the hot-water pipes, or sponge the affected leaves with a weak (1 oz. to a gallon of water) solution of softsoap.

Early Forced Planted-out Vines.—Those Vines started early in December must have the berries thinned, and it should be attended to immediately they are well set. Endeavour to obtain compact bunches, tying the shoulders in preference to cutting out a large number of berries. Remove superfluous bunches unflinchingly, striving for a full crop of well furnished bunches, properly swelled, and perfect in colour and finish. Allow the laterals to extend beyond the bunches as far as is consistent with the exposure of the foliage to light, tying and stopping them as required. Afford a liberal supply of water to the inside border, or liquid manure at intervals as required to maintain the soil in a thoroughly moist state, and mulch with a couple of inches thickness of short manure, and in as fresh state as safe, for, although a moderate amount of ammonia is beneficial, when too powerful it is productive of injury. The night temperature should range from 60° to 65°, 70° to 75° by day, with 10° to 15° advance from sun heat, commencing to ventilate from 70°, closing between 80° and 85°, damping all surfaces well at the time. Do not syringe the foliage, as there is danger of sediment—a deposit on the berries. The outside border should have enough covering to protect it from frost.

Vines Started at the New Year.—When the best fruit can be determined, disbudding may commence, but it is not wise to be in too great a hurry about this work, nor in tying the shoots to the trellis. The object of disbudding is to give the shoots left full exposure to light, it being better to err on the side of too little rather than too much, or overcrowding the foliage. Stopping, too, should not be done too hurriedly. Allow at least two joints, and if possible three or four joints beyond the bunch, and stop all laterals below the fruit at the first joint, or they may be rubbed off except from the two lowermost leaves. The laterals from these should be pinched at the first joint, but those level with and above the fruit may be allowed to extend as space admits. When in flower afford a night temperature of 65° to 70°, with 10° to 15° rise from sun heat, closing at 80°. Vine flowers set best when the atmospheric moisture is not excessive. An over-moist, or, on the other hand, a dry atmosphere must be equally avoided. Muscats require a higher temperature and drier atmosphere than some varieties when setting, artificial impregnation being occasionally practised by fertilising every bunch with Black Hamburgh pollen.

Late Grapes.—To do justice to late Vines they require a long season of growth, as to insure the Grapes keeping well they should be ripe by the middle of September. To effect this the Vines ought to be started at the end of the present month or early in March. Let the inside border be well supplied with water, and a supply of liquid manure will assist weakly Vines, but avoid making the soil sodden by needless applications. Remove the loose surface soil from the border, and supply fresh with a little well decayed manure intermixed, sprinkling over each square yard 4 ozs. of this mixture—bone superphosphate three parts, sulphate of potash two parts, basic slag or Thomas' phosphate powder one part, mixed.

Late Houses of Black Hamburgh.—The Vines should be kept cool and the soil only moderately moist to preserve the roots in sound condition. It will be necessary to ventilate freely at and above 50°, and when that becomes the mean of the external air, or a little before, the Vines will break naturally. The Vines will set their crops by the early part of June, and the berries swell with sun heat, artificial heat only being required after the Grapes begin to colour.

Cucumbers.—Plants in bearing should be examined once or twice a week for the removal of bad leaves and exhausted growths, thinning

the shoots, stopping, and clearing them of old or deformed fruits. The thinning of the shoots and encouraging young in place of spent growth is the way to keep the plants in continuous bearing. Stop the growths a joint or two beyond the show of fruit, but avoid overcrowding. In securing the shoots to the trellis do not tie them too tightly, but allow room for development. Plants that have been in bearing for some time will be greatly benefited by removing a portion of the surface soil without injuring the roots, and supplying fresh warmed soil. Turfy loam, with a fourth of well-decayed manure, and a 9-inch potful of wood ashes, also half that quantity each of soot and superphosphate added to each barrowful of loam, will answer; or turfy loam alone may be used, sprinkling over it a good handful—3 or 4 ozs.—of the following mixture per square yard. Bone superphosphate three parts, powdered saltpetre two parts, ground gypsum one part; mix and keep in a dry place. Maintain the bottom heat steadily at 80°, the night temperature at 65° to 70°, 5° less in severe weather, 70° to 75° by day, rising to 80° to 85° from sun, and closing early in the afternoon, so as to run up to 90°, 95°, or 100°, damping the paths and other surfaces in the morning and early in the afternoon. If the surfaces are dry damp well before nightfall.

For young plants hillocks or ridges should be formed, preferably the latter, the whole length of the bed, about 2 feet wide at the base, with the top flattened, so as to give a depth of 10 to 12 inches, the soil being made moderately firm, and when warm the plants may be turned out, firming the soil about the balls, and raising it a little over the depth the plants were before, but not very much, as this is liable to induce canker; yet the soil may be brought up as high as roots show on the stem. We find nothing better for Cucumbers than good turfy loam, laid up sufficiently long to destroy the herbage, mixing with every bushel a quart of wood ashes and a pint each of quicklime and dry soot, incorporating well. These substances have an effect on larvæ likely to injure the plants, and enrich the soil. Plants for trellises should be trained with a single stem secured to a stick tied to the lowest wire of the trellis, rubbing off the laterals as they appear until the height of the trellis is reached.

In pits and frames with the shoots trained over the surface of the beds, the plants should be stopped at the second rough leaf, and the resultant growths at about every foot of extension. This will give plenty of shoots for bearing, which must not be crowded, and should be stopped at a joint or two beyond the show for fruit. Afford the temperature advised for older plants. If the sun be powerful, and the plants show indications of flagging, shade for a few days. Attend to manure-heated frames for linings as required, protecting with a double thickness of mats at night. Do not apply more water than is necessary to keep the plants gently growing, very little being required in pits or frames where the heat is derived from fermenting materials.

In houses where red spider has appeared on the winter fruiting plants coat the hot-water pipes with sulphur and lime in equal parts, formed into cream with water, heating the pipes to as near boiling point as possible for a couple of hours on a calm evening, taking care that the house is not more than 80° to 85°; still it must be kept close, and then allow the pipes and house to cool down to their regular temperature. The foliage must be thoroughly dry. The same process may be repeated in the course of a few days; it is generally effectual against white fly, thrips, and mildew, as well as red spider.

THE FLOWER GARDEN.

Acacia lophantha.—This species is very effective in mixed beds of fine-foliaged and flowering plants, and is suitable for dotting among tuberous Begonias. Quite young plants are the best, and these can be raised from seed in time for bedding out next June. The seeds are very hard, and unless softened prior to sowing are a long time in germinating, not unfrequently failing to do so altogether. Place the seeds in a bottle or jar of water, and either plunge this in a brisk hotbed or set in an evaporating trough over hot-water pipes. Not till the seeds are swollen considerably should they be taken out of the water, placed in a pan of well warmed moist soil, and then given the benefit of a fairly strong bottom heat. Seedlings should be taken out singly with a label and placed in small pots, according as they are large enough to move safely.

Cannas.—These also can be raised from seed, though seedlings should not be depended upon where large masses of plants are wanted. Seedlings are very handy for dot plants or for using nearer the fronts of large mixed beds. The value of the large flowering varieties should not be lost sight of, a packet of seed of Crozy's hybrids giving several very handsome varieties of a sturdy habit of growth. These will bloom in the open, and if carefully lifted and potted in the autumn before frosts cripple them they will flower in a warm greenhouse or well heated conservatory for several weeks longer. The seeds of these are very hard, and require to be treated exactly the same as recommended in the case of *Acacia lophantha*. Germination is usually irregular, therefore lift the forwardest seedlings carefully out of the pans when about 2 inches high, disturbing the soil as little as possible, and more plants may then be had.

Erythrina Crista-galli.—Large old plants grouped in a bed, or interspersed among other sub-tropical plants, are very attractive when in full bloom. At present stock plants ought to be kept cool and somewhat dry. Next month they may be cut back rather hard, shaking the roots clear of old soil, and repotting following when the plants are breaking afresh. Seedlings raised early this spring could be grown to a good size in time for planting out, these flowering the same season, and would prove most serviceable for the following year. Soak the seeds

before sowing, and otherwise treat as advised in the case of *Acacias* and *Cannas*.

Ficus elastica.—This is a somewhat heavy plant for the flower garden, but is yet freely used, especially in town gardens. It is of rather slow growth, and should be at least 15 inches high, and well furnished with leaves down to the ground when bedded out. Old stems may be cut into as many cuttings as there are leaves, the latter being preserved and supported with a small stake when the cuttings or eyes are fixed in a pan of peaty soil. If given the benefit of a brisk bottom heat most of the cuttings will root, and eventually develop into neat plants. The tops of the plants should be saved to a length of 9 inches, and only the two lower leaves cut off. These will root either in bottles of water or placed singly in small pots, plunging these in a brisk heat, and good plants for the flower beds will result.

Grevillea robusta.—For small beds this year's seedlings will be large enough, and they would present an elegant appearance dotted among showy plants of neat growth. At the end of the season they could be lifted and used for house and conservatory decoration during the winter, again doing good service in the larger beds the following summer. The seeds will not require to be soaked in water, but should be sown at once in a pan of peaty soil and plunged in a brisk hotbed, covering with a square of glass and keeping uniformly moist. Sometimes the seed germinates quickly, at other times it is very slow, and the soil should not, therefore, be hurriedly broken up. The seedlings should be placed in a small pot at first, and kept growing in gentle heat, giving a shift into large pots before they become root-bound.

Eucalyptus globulosus.—This is better known as the Blue Gum tree, and in addition to being fairly ornamental, is also supposed to be of good service as an anti-malarial plant. It is of very rapid growth, and plants can be grown to a height of 6 feet or more within seven months of the time of sowing the seed. Two other species, *E. citriodora*, this having lemon-scented glaucous leaves, and *E. coccifera* can also be raised from seed, and are fairly effective in the sub-tropical garden, all withstanding a moderately severe frost. Seed germinates readily enough, and this and seedlings should be treated much as advised for *Grevillea robusta*.

Chamæpeuce.—Of these the silvery leaved *C. diacantha* is the most attractive, though the green-leaved *C. Casabonæ* is also effective. Both are raised from seeds, which should be sown now in order to have plants strong enough for bedding out in June. Sow in pans of peaty soil, set on or plunge in hotbed, cover with squares of glass, and darken till the seedlings appear, when the pans should be placed on a shelf, still in heat, till the seedlings are strong enough to transfer singly into 2½-inch pots.

Hollyhocks.—Seedlings are less liable to be crippled by disease than are choice or named varieties raised from cuttings. In order to be certain of the former flowering next summer the plants must be raised early, and be well established in 6-inch pots before finally planting out. The seed germinates very quickly in a brisk heat, and the pans containing the seedlings should be kept well up to the glass in order to keep the young plants sturdy. Pot singly when in rough leaf, and give a shift before transferring to cooler quarters.

Verbenas.—Seedlings are effective enough in mixed beds, and are far more likely to do well than are plants raised from cuttings. Sometimes the seed germinates very quickly, and occasionally it is a long while in doing so. Sow at once in pans of light soil, and treat as advised for *Grevillea robusta*, pricking out the seedlings in pans or boxes of good loamy soil when large enough to handle. By raising them early it will be possible to root the tops of the seedlings, and thus double the stock of plants.

Sweet Peas.—These are of such good service for affording cut bloom that early plants should be raised under glass and duly turned out into the open. If five or six seeds of the choicer varieties are sown in each 3-inch pot filled with good loamy soil, and are then placed in a warm house, all will germinate strongly. The plants ought not to be kept in heat long enough to draw them up weakly, but should be placed in cooler quarters to harden off prior to planting out. Each single pot of plants is sufficient to form the foundation of a large group, and will most probably surpass any raised in the open ground.

PLANT HOUSES.

Erica hyemalis.—All plants that have done flowering should be cut back, so that they can start into growth for another season. When they have made young shoots about an inch in length place in larger pots. In potting, good peat and coarse sand should be used; remove the old drainage only from the balls, and do not disturb the plants further. The fresh soil must be pressed firmly round the old ball. After potting stand the plants on ashes in the greenhouse, or in pits where frost can be excluded and abundance of air given. If the ashes are kept moist and the pots are syringed occasionally, the plants will not need water for at least ten days, provided the old ball was in a suitable state for moisture when potted. The longer they can be kept without water after potting the better.

Hardwooded Varieties.—Staking and tying should be completed as early as possible, and do not use more stakes than absolutely necessary. Any stakes that have decayed and any portion left in the soil must be removed, or fungus will, in time, spread through the whole of the soil. As far as possible place the new stakes into the holes from which others have been drawn out. Young plants may be potted at once. Never allow them to become root-bound. Use for these plants good fibry peat in lumps, a little charcoal broken to the size of hazel nuts, and coarse

silver sand. Give the same treatment after potting as advised for *E. hyemalis*. When the object is to increase the size of the plants the flower buds should be removed directly they appear. Any strong growths that are taking the lead should be drawn down towards the rim of the pot so that the weaker ones will gain strength.

Coronilla glauca.—This is a useful old decorative plant and easily brought into flower. We insert cuttings in sandy soil in pots in September, give a watering, and place them in a hand-light or under a bell-glass, and the majority of them root. These should be put in 2-inch pots; loam and peat with sand will grow them well. Place where the temperature ranges from 45° to 50°, and in one season useful plants in 4-inch pots may be grown. They should be stood outside during the summer on a bed of ashes and kept well syringed. The shoots will need pinching to induce them to branch. Any plants that have become straggling may be pruned back, and when they have commenced to grow repot them.

Epacris.—These are amongst the most useful plants we have for supplying flowers. Plants that flowered early should be pruned back and placed on moisture-holding material in the greenhouse where they can have an abundance of air, and be syringed once or twice daily according to the weather. When these plants have started into growth they should be repotted if they need more rooting space. The same care is required in potting and the after treatment as advised for Heaths. Any plants that did not start freely into growth last season may have the flowers picked off and be allowed to grow without cutting them back.

Azaleas.—As the varieties of *A. indica* go out of bloom they should be placed in gentle warmth to make their growth. If they need repotting this may be done immediately the roots are active. Peat and sand is generally used for these plants, but we have long since discontinued its use. They do equally well in good fibry loam and leaf mould in about equal proportion, with a liberal dash of coarse sand added. The compost should be made firm, and water carefully applied afterwards. Those that do not need repotting may have a little artificial manure scattered on the surface and watered in.

THE BEE-KEEPER.

APIARIAN NOTES.

OWING to the wet and stormy nature of the weather which prevailed during January and the early part of the present month, bees have been unable to gather pollen from the flowers that are in bloom. A severe storm occurred in this district between the hours of 12 midnight and 4 o'clock A.M. on the 12th February. Many hives were blown about, but comparatively little damage done to my apiary.

Having been confined to the house of late, I have been unable to make some contemplated examinations, but from what I have seen and learned from a reliable source many hives are now far advanced in brood. I see my bees from where I am writing flying amidst a heavy downpour of rain; doubtless the season and advanced state of their brood are the cause of their uneasiness. Disease, with the exception of the one case mentioned last week, is unknown in my apiary, but I am sorry to say that one exception shows no abatement of mortality. In speaking recently to one of the modern converts, and showing him bees in their various stages of disease, he declared they were simply the old bees. I told him distinctly he and others of the same school should use their eyes and judgment a little more, and to better purpose, withdrawing at the same time the feeding scoop packed full of dead and dying bees of different ages. The bent of his mind was so strong on his preconceived nonsensical theory, that he would fain have urged the bees died from starvation, but floundered under the proof that the hive had in store upwards of 20 lbs. of honey and 3 lbs. of recently supplied sugar.

These mysterious diseases give much room for reflection. There are, however, some men who think and give to the world the benefit of their thoughts and researches. Would, then, some such a one solve the problem of this dire disease to bees. It is more fatal than foul brood, which we can control, although not infectious—at least, I have not found it so; but its fatal character when once it appears makes short work of the strongest hive. This makes me all the more anxious to know its first cause. Pure Carniolans in my apiary for about twenty years have never shown the least signs of any disease. This experience gives me hope and assurance for the future that by ordinary care and good guiding a healthy, consequently a profitable, apiary can always be depended upon.

My experience in 1893 of thousands of drones of different breeds taking possession of a droneless hive having a virgin queen, the nearest hives to it being five miles on one side, and perhaps twenty or more on the other three, is not only remarkable, showing

the amount of instinct, but also good proof how diseases may be transmitted to long distances for their apparent source. Flies are active agents in transmitting diseases from one place to another to both animal and vegetable life, while useful insects are not exempt from carrying germs of disease.

Bee-keepers ought to remember that bees on the whole are very early this year. Care will be required of them to use every means to prevent brood-drawing or any relaxation of egg-laying; both must be kept up at all hazards, although the laying queen has to be superseded early.—A LANARKSHIRE BEE-KEEPER.

TRADE CATALOGUES RECEIVED.

George Bunyard & Co., Maidstone.—*Descriptive Catalogue of Home-grown Seeds.*

H. Cannell & Sons, Swanley, Kent.—*Floral Guide for 1894.*

James Carter & Co., High Holborn, London.—*Grass and Farm Seeds.*

Wm. Clibran & Son, Altrincham.—*Agricultural Seeds.*

Cooper, Taber, & Co., Southwark Street, London, S.E.—*Farm Seeds.*



*All correspondence should be directed either to "THE EDITOR" or to "THE PUBLISHER." Letters addressed to Dr. Hogg or members of the staff often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post, and we do not undertake to return rejected communications.

Climber for North Wall (F. K. D.).—We know of no plant that grows more quickly than the common Virginian Creeper, *Ampelopsis hederacea*, but the growths do not cling to the surface and the leaves fall in the autumn. No evergreen clinging plant would cover the north side of a stone wall so quickly, constantly, and satisfactorily as the common Irish Ivy. If you require a less common variety you may plant Rægner's Ivy, *Hedera Rægneriana*. The rapidity of the growth depends on richness of soil and well rooted plants, those established in pots by nurserymen being much better than plants dug from the ground, though when these can be had with bushy roots they answer fairly well.

Treatment of *Pancratiums* (H. B.).—Plants that have had a good season of rest may now be repotted or top-dressed. If the latter, use two-thirds loam and one of cow manure prepared as previously advised. If they need the former the compost you use for *Eucharises* will suit these plants well. Too much drainage should not be employed, as the plants root deep and with great freedom. In repotting shake away the whole of the old soil from the roots, and be careful not to bury the bulbs, or a large per-centage of the soil will not contain a single root. Spread out the roots carefully near the surface, for they are certain before the end of the season to be crowded round the drainage. These plants will grow in almost any position in the stove after potting until they are again established, even standing under the shade of large plants; syringe liberally, but do not give too much water. Watch for thrips, for if there is any in the house they are certain to attack the under side of the foliage of these plants.

Golden Russet Apple (York).—You have been correctly informed in this being a good dessert Apple. It is, in the estimation of many good judges, one of the best, but the tree is not one of the most hardy, and sometimes assumes a stunted habit when trees on the Paradise stock are permitted to overladden themselves in a young state. The following is the "Fruit Manual" description of the variety with the author's note appended:—"Fruit, medium-sized, 2½ inches wide, and 2¼ inches high; ovate. Skin, thick, covered with dingy yellow russet, which is rough, thick, and scaly on the shaded side and round the base, and sometimes with a bright flame of varnished red on the side next the sun. Eye, small and closed, or half open, with erect convergent segments, set in a prominently plaited basin. Stamens, median; tube, conical. Stalk, very short, inserted in an uneven cavity, and not protruding beyond the base. Flesh, pale yellow, firm, crisp, sugary, and aromatic, but not abounding in juice. Cells, obovate; axile, closed. An excellent dessert Apple of first-rate quality; in use from December to March. The tree is healthy and an excellent bearer, but requires a warm situation to bring the fruit to perfection. This is another of our old English Apples. Worlidge calls it the Aromatic, or Golden Russeting, 'it hath no compeer, it being of a gold-colour coat, under a

russet hair, with some warts on it. It lies over the winter, and is, without dispute, the most pleasant Apple that grows, having a most pleasant aromatic hautgust, and melting in the mouth.' It is called St. Leonard's Nonpareil about Horsham from being grown under that name at Leonard's Lee, near that town."

Compost for Plants (Reader).—When Tuberous Begonias are started into growth in small pots a rather light and free compost is used by the chief growers, consisting of equal parts of the best turfy loam of medium texture, very sweet leaf soil, and cocoa-nut fibre refuse, adding some crushed charcoal and sand for insuring porosity. When transferred to larger pots twice the proportion of loam is used to the other ingredients, and if the plants are strong and large, very sweet pulverised manure may be substituted for the fibre refuse, adding a pound of bonemeal to half a bushel of soil. The larger the plants and pots the rougher the compost should be, and the more firmly pressed down. Caladiums will grow well in similar compost, though some persons employ fibrous peat with loam and leaf mould in the early stages of growth. Camellias thrive admirably in the same mixture, but the loam should not contain lime, and it should be of a good wearing character, not full of sand or silt, or it will settle into a close mass. Much peat and leaf mould are of little value, and some little short of poisonous to plants; and it is well also to remember that unless good management in watering and other details is accorded throughout, plants will not thrive in even the best of soil.

Flowers for Cutting (Flower Grower).—We have had too much experience to recommend any varieties as the "best" that could be grown. What would prove such in one case might be otherwise in another, so much depending upon circumstances. The following have been found good for market purposes: Pompon Dahlias—Brilliant, deep crimson; E. F. Junker, pale amber; Isabel, orange scarlet; Whisper, clear yellow, edged with gold; Lady Blanche, white; White Aster, pure white. "Show" Dahlias would be of no service to you. It is Cactus Dahlias you want, and six good varieties of the latter are Amphion, chrome yellow; Cannell's Favourite, old gold; Juarez, intense scarlet; Maid of Kent, cherry red, crimson ground, tipped with white; Mont Blanc, large white; and Constance, white. Six border Carnations that should suit you are Mrs. Reynolds Hole, apricot, terra cotta shading; Germania, yellow; Countess of Paris, delicate peach; The Old Clove, crimson; Mrs. Muir, white; and Gloire de Nancy, white. Presumably you mean Zonal Pelargoniums, and you scarcely need grow a dozen of these, there being small demand for single flowers. Good doubles are F. V. Raspail, scarlet, the one most extensively grown; Turtle's Surprise, a miniature F. V. Raspail; Grand Chancellor Faideherbe, deep crimson; Lord Hartington, salmon; Heroine, white; and Swanley Double White. Tea Roses would be of the most service, and of these you may plant Madame Lambard, bright rose, fine buds; Anna Ollivier, flesh colour; Hon. Edith Gifford, white, tinted rose; Isabella Sprunt, sulphur yellow, buds good; Madame Falcot, apricot yellow, also recommended for its buds; The Bride, fine white; and Catherine Mermet, pink or flesh colour. Plant The Czar Violet in the position you name, though it would do better quite in the open.

Propagating Hardy Ferns from Spores (R. T.).—Choose a pot which a bellglass will just fit within the rim, place a large crock over the hole, half fill the pot with small pieces, and on them place half an inch of moss; then fill the pot to the rim with the following mixture—viz., sandstone broken in all sizes from that of a grain to a hazel nut, sandy fibrous peat and yellow fibrous loam, of each equal parts, adding to the whole one-sixth of silver sand. Put over the surface a very small quantity of sifted soil, and make it firm by pressing it with the hand. Put on the bellglass, and if it fits closely on the soil it is all right. Remove it, and stand the pot in a pan in a rather shady but not dark part of the greenhouse, for what is wanted is a diffused though not a strong light. Give a good watering all over the surface through a fine-roset watering pot, filling the pan with water. Now take the frond with the spore cases open, and, holding it over the pot, rub it with the hand on the under side, and a kind of brown or yellow dust will fall on the soil. You may scrape the spore cases from the back of the fronds, but if the dust fall so as to make the soil brown or yellow it is enough. Press the surface gently with the hand and put on the bellglass, taking care that it touch the surface all round. Keep the pan or saucer full of water, and give none on the surface except it become dry, which it never ought to do, nor will it if sufficiently shaded and the saucer be kept full of water. When the surface becomes green tilt the bellglass a little on one side at night, and as the soil becomes greener tilt it higher, giving a gentle watering now and then to keep the surface from becoming dry. When the plants have made two or three fronds gradually remove the bellglass, and pot the Ferns when they can be handled safely. The pots may be placed in a pit or a shaded position in a greenhouse.

Names of Plants.—We only undertake to name species of plants, not varieties that have originated from seed and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in firm boxes. Slightly damp moss, soft green grass or leaves form the best packing, dry wool the worst. Not more than six specimens can be named at once, and the numbers should be visible without untying the ligatures, it being often difficult to separate them when the paper is damp. (H. M.).—1, Ficus repens; 2, Adiantum cuneatum. (L. Y.).—1, Maranta Veitchi; 2, Freesia Leichtlini. (D. P.).—Dracena indivisa. (X. Y. Z.).—1, Cyrtopodium superbiens; 2, C. barbatum. (B. H.).—1, Linum flavum; 2, Monochætum, possibly sericeum multiflorum; 3, Aloe socotrana.

COVENT GARDEN MARKET.—FEBRUARY 21ST.

MARKET still very quiet.

FRUIT.

			s.	d.	s.	d.				s.	d.	s.	d.		
Apples, per bushel	2	6	to	9	0	Peaches, per doz.	..	..	0	0	to	0	0
Cobs	40	0		42	6	Plums, per half sieve	..	..	0	0		0	0
Grapes per lb.	1	0		2	6	St. Michael Pines, each	..	..	2	0		6	0
Lemons, case	10	0		15	0	Strawberries per lb.	..	..	10	0		16	0

VEGETABLES.

	s.	d.	s.	d.		s.	d.	s.	d.			
Beans, Kidney, per lb.	..	0	6	to	1	0	Mustard and Cress, punnet	0	2	to	0	0
Beet, Red, dozen	1	0	0	0	Onions, bushel .. ..	..	3	6	4	0	
Carrots, bunch	0	3	0	4	Parsley, dozen bunches ..	..	2	0	3	0	
Cauliflowers, dozen	2	0	4	0	Parsnips, dozen .. ..	..	1	0	0	0	
Celery, bundle	1	0	1	3	Potatoes, per cwt. .. ..	..	2	0	4	6	
Coleworts, dozen bunches		2	0	4	0	Salsafy, bundle .. ..	..	1	0	1	5	
Cucumbers, dozen	2	0	7	0	Scorzoneria, bundle .. ..	..	1	6	0	0	
Endive, dozen	1	3	1	6	Seakale, per basket .. ..	..	1	3	1	6	
Herbs, bunch	0	3	0	0	Shallots, per lb. .. ..	..	0	3	0	0	
Leeks, bunch	0	2	0	0	Spinach, bushel .. ..	..	1	6	3	0	
Lettuce, dozen	0	9	1	0	Tomatoes, per lb. .. ..	..	0	6	0	9	
Mushrooms, punnet	0	9	1	0	Turnips, bunch .. ..	..	0	3	0	0	

AVERAGE WHOLESALE PRICES.—OUT FLOWERS.

Orchid Blooms in variety.

	s.	d.	s.	d.		s.	d.	s.	d.	
Arum Lilies, 12 blooms ..	2	0	to	4	0	Orchids, per dozen blooms	3	0	to 12	0
Azalea, dozen sprays.. ..	0	6	1	0		Pelargoniums, 12 bunches	6	0	12	0
Bouvardias, bunch	0	6	1	0		Pelargoniums, scarlet, doz.				
Camellias, dozen blooms ..	0	9	2	0		bunches	4	0	9	0
Carnations, 12 blooms ..	2	0	4	0		Poinsettia, doz. blooms ..	3	0	4	0
Chrysanthemums, dozen						Primula (double), dozen				
bunches	4	0	12	0		sprays	0	6	1	0
Eucharis, dozen	3	0	4	0		Pyrethrum, dozen bunches	2	0	4	0
Gardenias, per dozen ..	6	0	12	0		Roses (indoor), dozen ..	1	0	2	0
Hyacinths, dozen spikes ..	2	0	4	0		„ Tea, white, dozen ..	1	0	3	0
Hyacinth, Roman, dozen						„ Yellow, dozen	2	0	4	0
sprays	0	6	0	9		Roses, Safrano (French),				
Lilac (French) per bunch	3	6	6	0		per dozen	1	6	3	0
Lilies of the Valley, dozen						Roses, Safrano (English),				
sprays	0	6	1	0		per dozen	2	0	3	0
Lilium longiflorum, per						Roses, Maréchal Neil, per				
dozen	6	0	12	0		dozen	3	0	6	0
Maidenhair Fern, dozen						Tuberose, 12 blooms.. ..	0	6	1	0
bunches	4	0	6	0		Tulips, dozen blooms ..	0	6	1	6
Marguerites, 12 bunches ..	2	0	4	0		Violets, Parme (French),				
Mignonette, 12 bunches ..	3	0	6	0		per bunch.. .. .	2	0	3	6
Narciss, Yellow (French),						Violets, Ozar (French), per				
dozen bunches	1	6	2	6		bunch	2	0	2	6
Narciss, White (French),						Violets (English), dozen				
dozen bunches.. ..	3	0	5	0		bunches	1	0	2	0

PLANTS IN POTS.

	s.	d.	s.	d.		s.	d.	s.	d.		
Arbor Vitæ (golden) dozen	6	0	to	12	0	Ficus elastica, each	1	0	to	7	6
Arum Lilies, per dozen ..	6	0	12	0		Foliage plants, var., each..	2	0	10	0	
Aspidistra, per dozen ..	18	0	36	0		Genista, per dozen	12	0	18	0	
Aspidistra, specimen plant	5	0	10	6		Hyacinths, per dozen ..	5	0	9	0	
Azaleas, per dozen	24	0	42	0		Lilium Harrissi, per dozen	12	0	24	0	
Cineraria, per dozen ..	6	0	12	0		Lycopodiums, per dozen ..	3	0	4	0	
Cyclamen, per dozen ..	9	0	18	0		Marguerite Daisy, dozen ..	6	0	12	0	
Dracæna terminalis, per						Mignonette, per doz. . .	6	0	9	0	
dozen.	18	0	42	0		Myrtles, dozen	6	0	9	0	
Dracæna viridis, dozen ..	9	0	24	0		Palms, in var., each	1	0	15	0	
Ericas, per dozen	9	0	24	0		„ (specimens)	21	0	63	0	
Euonymus, var., dozen ..	6	0	18	0		Poinsettia, per dozen ..	12	0	15	0	
Evergreens, in var., dozen	6	0	24	0		Solanums, per dozen ..	9	0	12	0	
Ferns, in variety, dozen ..	4	0	18	0		Tulips, per dozen	6	0	9	0	
Ferns (small) per hundred	4	0	8	0							



GALLOWAYS.

"GALLOWAYS are admittedly a hardy race, which can be kept the greater part of the year in the open, with the sky as the only roof above them, and far from being epicures, they will pick up and thrive on coarse herbage that some of the more dainty breeds would be slow to consume." So writes the Rev. John Gillespie, Editor of the "Galloway Herd Book," in the "Live Stock Journal Almanac." The hardness strikes one as the primary characteristic even when seeing a few of this remarkable breed of polled cattle at an ordinary cattle show. We had so seen them, and must admit not being particularly impressed by them in the showyard. Nor was it till we recently saw the Border Blackskins on their native heath in considerable numbers, that we were able to appreciate the full force, value, and truth of Mr Gillespie's description of them. On hill and dale did we see them out on the bleak Cumberland Fells, thriving on the coarse herbage almost as well as those on the richer pastures of the alluvium of the river Eden. Not quite as well, nor were the hill herds so presentable as the dale beasts, many of which,

in addition to better food and shelter, had the advantage of pedigree, parentage, and selection.

Though so shaggy coated, the Galloway is altogether superior to the Kyloes or West Highland cattle. It is very symmetrical, close knit, and compact, with a massive body, very fleshy, a deep chest, level back, well filled hips, width of chine, and a depth, length, and squareness of build that requires some study to be fully realised, owing to the shortness of its sturdy legs. Like the Hereford, it has evidently been bred for beef, and selected beasts appeared to possess all the points which combine to render such animals profitable. If in them the requisite early maturity is present in combination with other points, as we believe it to be (for they are said to "fatten kindly"), then indeed are they worthy of much more general attention from southern graziers than is accorded them. There can be no question that a herd of Galloways of eighteen or twenty months, in fresh condition at turn-out time in spring, would prove much more profitable to the grazier in the following October than the ordinary store beast.

Though inferior milkers as regards quantity the milk is rich, and the butter so delicious as to show how possible it is to obtain valuable dairy cows by selection even from Galloways. If the popular belief that Suffolk Redpolls are descendants from the Galloways which have long been sent from Scotland to Norfolk and Suffolk in such large numbers for grazing is correct, it affords ample proof of what is possible with Galloways. It is altogether a question of selection. That is how in the past we have obtained animals remarkable for the production of beef or milk, or both in combination, for neither of these desirable characteristics are fixed in any breed. It is precisely because the fleshy Suffolk Redpolls have such a high average yield of milk so rich as to rival that of the Jerseys, and also fatten so freely, that we regard them as ideal farmer's cows.

Hardy as the Galloways undoubtedly are, some shelter is wisely afforded them in commodious hovels at night, and most probably in rough or snowy weather. We had no opportunity of inquiring as closely as we should like to do into this interesting and important detail of management, but the provision of shelter showed that its value was understood and appreciated. Where, indeed, should it be if not upon such bleak pasturage? The gathering of the cattle near the hovels towards evening told plainly enough of the shelter and food to which they were accustomed at night. As we have so often shown, the power of endurance of the most hardy animals ought never to be taxed so much as to bring down condition and endanger life. Certainly no contrast could be greater than that afforded by the plump, fleshy condition of these sturdy animals and the gaunt, emaciated beasts that are now to be seen out on Leicestershire pastures. We do not forget how much the long drought had to do with this lamentable state of things in the Midlands, and that northern counties suffered much less from it; but we confess to a desire to see a herd of Galloways on rich Midland pasture. Why not, indeed? They would answer as well as the Herefords, and under good management must come off ripe for the butcher at a fair profit.

WORK ON THE HOME FARM.

Pay no heed to fanciful statements as to the exact value of various manures for corn, or a given date for sowing. When the frost departs and the land is in condition sow the corn at once, only take care to have the best sample of seed procurable without going to an extravagant outlay for it. In these times it does not answer to purchase enough Oats or Barley for a 20-acre field at 10s. a bushel, nor is it necessary to do so. It is only under exceptional conditions that we ever give so much for seed corn. That was when we had several farms in hand, and made the home farm a nursery for raising seed for outlying farms. Then we bought special sorts of Wheat, Barley, and Oats at special rates, not always to advantage, for all is not gold that glitters, and certain showy sorts did not always prove equal to the promise of a show-yard sample. For all ordinary purposes a good sample can be obtained at local markets, or, better still, can be had from well-screened homegrown corn. Then, with a good seed bed well stored with fertility, either through the previous crop or

by drilling manure with the seed, there should be no difficulty about a full crop, plenty of straw, and a fine bold sample of corn.

By sowing in the manner indicated while the soil is in suitable condition, seed germination and a full even plant is a certainty. If Rye Grass, mixed seeds, Clover, or Sainfoin are to follow the corn, wait till the plant is visible along the rows, and then drill in the green crop. This method affords the corn a fair start, and prevents the green crop from too vigorous growth before harvest. We have several times seen so much grass in the bottom of corn sheaves as to be a serious nuisance and hindrance in harvest. To all farmers south of the Trent we advise including a few acres of land for Green Maize, to be sown about the first week in June. This crop might follow the last field of Swedes, or Rye, or Kale, or Sainfoin folded with lambs. It is immaterial what the crop is or what purpose the land has been turned to.

CURING HAMS AND BACON.

IN the issue for January 11th you give a recipe for pickling hams, but I have no means of smoking, so cannot make any use of it. Can you give me any advice on storing bacon after it is dried? After mine is dry (hung up to the kitchen ceiling) it is put away in a chest filled (fresh every year) with lime, wood ashes, and chaff. The kitchen is small, and gets too hot after March and April. Except for getting very dusty and requiring scraping before cooking, it usually keeps fairly well. I fancy the lime makes it rather hard and dry; but on the other hand if hung in a lumber room it is very apt to get the weevils or turn green mouldy in damp weather. Being badly off for a good airy place to hang it in, I expect nothing can be done except putting it away in the chest, but I thought possibly you might be able to recommend some improvement. Can you also tell me what is the special method of curing Wiltshire bacon, which I see you refer to in January 25th? When is the weevil fly to be most guarded against?—W. H. B.

[If you have to send your hams to a distance for the smoking, do not hesitate to do so. The delicious flavour of hams cured as we advise renders them superior to any you can buy. A dry, well ventilated room is required for keeping bacon. The weevil fly attacks hams and bacon during the summer months, but the fly may be kept off by placing both hams and flitches in stout paper bags, or preferably in an insect-proof enclosure, which is managed by covering all openings with perforated zinc having very small holes. For Wiltshire bacon the pigs are singed, not scalded. When the pork is cold, the flitches are salted in the pickle of which we gave the recipe. Under the new system the flitches are at once pumped, *i.e.*, the pickle or brine is forced into the thick parts of the meat, this is done by a force pump or salting syringe. It is well to mention that the pickle is boiled, and skimmed till all scum disappears, then left to cool and settle till clean. After the pumping, the flitches are laid on benches skin downwards, and are sprinkled over with an equal mixture of saltpetre and food preservative, both to preserve the meat and maintain the colour. Finely powdered salt is also well rubbed in. After three days the sides are turned, or rather their position is reversed, the lower sides being brought to the top, fresh salt being again rubbed in. If for immediate use, four or five more days in the salt is sufficient; if for keeping, then eight or nine days. They are then washed in cold water, wiped with a damp cloth, and hung up to dry. When dry, they are ready as green bacon; if they are to be smoked they are dusted with finely ground pea meal, and hung up in the smoke house for two days. These are the chief points of the modern "express" method of bacon curing. You will probably find the old and slower way of placing the flitches in pickle answer best.]

OUR LETTER BOX.

Chemical Manures (T. C. C.).—Your letter was one day too late for the information you need being obtained for publication this week.

METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude, 111 feet

DATE.		9 A.M.					IN THE DAY.				Rain.
1894. February.		Barometer at 32° and Sea Level.	Hygrometer.		Dirrec- tion of Wind.	Temp. of soil at 1 foot.	Shade Tem- perature.		Radiation Temperature		
			Dry.	Wet.			Max.	Min.	In Sun.	On Grass.	
		Inchs.	deg.	deg.		deg.	deg.	deg.	deg.	deg.		Inchs.
Sunday	.. 11	29.571	50.8	48.0	S.W.	43.0	54.3	44.0	68.3	39.2	0.033
Monday	.. 12	29.526	41.7	37.2	W.	43.8	46.7	38.8	83.8	34.0	—
Tuesday	.. 13	29.956	37.1	34.4	N.W.	42.2	45.1	32.3	77.9	26.3	—
Wednesday	14	30.173	34.3	33.4	N.	40.9	45.1	29.2	76.2	25.9	0.079
Thursday	.. 15	30.169	39.3	39.1	S.E.	39.9	47.8	33.2	51.8	29.3	0.010
Friday	.. 16	30.084	42.9	40.7	S.E.	40.8	47.2	38.9	53.2	35.4	0.040
Saturday	.. 17	30.182	36.8	35.6	E.	41.0	39.8	37.1	51.0	35.7	0.408
		29.952	40.4	38.3		41.7	46.6	36.2	66.0	32.3	0.575

REMARKS.

11th.—Gale all day, generally overcast and occasional spots of rain; showers at night.
12th.—High wind and bright sunshine throughout.
13th.—Bright sunshine throughout.
14th.—Bright and sunny all day.
15th.—Almost continuous light rain from 2.30 A.M. to 9 A.M., and drizzle till 2 P.M.; overcast after and fair evening.
16th.—Overcast all day; fair evening.
17th.—Incessant rain from 5.30 A.M. to 10 P.M. Not so warm as the previous week, but temperature still above the average.—G. J. SYMONS.



THE season of seed-sowing is again upon us, and many persons have, no doubt, commenced the work in anticipation of a bountiful harvest in due time, but if we are to reap the full reward we must adopt the best methods of preparation and cultivation. The soil must be enriched and fertilised for the reception of the seed; then, as soon as the seedlings appear the hoe should be freely used to keep the soil open and allow of its nutrient elements having free access to the roots, and also to keep down weeds that would otherwise not only choke the plants but appropriate their food. Yet after all this and more has been done, how often do we wake up some morning to find that disease, or some insect pest, has attacked our otherwise flourishing plants, and ruin seems staring them in the face. I am afraid that many such instances could be recorded throughout the country in a season, and this especially with regard to the Onion crop.

We hear on every side of large plots of Onions being taken off by the Onion maggot—fine, healthy-looking plots, going utterly to ruin in a few days. How is it to be prevented, or, rather, where is the cure? I attended some lectures only a short time ago, and one of the subjects treated was the Onion. The lecturer spoke at great length, and gave his idea as to the best means of prevention from an attack of the maggot. He advised early sowing, and the use of soot and lime frequently in the early stages of growth, as some of the best means of prevention. He said the weakest plants were always attacked, and when asked where the fly would deposit its eggs if there were no weak plants, he said that he thought there would always be some laggards in every district, who would, either through poor cultivation or neglect of early sowing, provide weak plants for the maggot. That is all very well in its way, but I think the majority of the readers of the *Journal of Horticulture* will agree with me that we want to get a little farther. It reminds me of the professor who boasted that he had found out many new diseases, and when asked if he had found a cure, he answered no, but he had succeeded in finding some very long names for them. It is the cure we want, as, obviously, long names do not help us out of difficulties, but rather tend to make a few more to be overcome.

It seems to me inevitable that if a cure is not found for the Onion maggot it must spread over the country, until at some future time it will be very difficult, if not impossible, to grow Onions. In speaking to a practical gardener from the neighbourhood of Liverpool a short time ago he told me that in many gardens in his district Onion growing had been wholly abandoned on account of the maggot. We all know that there are some as able cultivators in the Liverpool district as in any part of the country, and if they are unable to cope with the enemy it stands to reason it must increase, and if there should not be sufficient weakly plants for the fly to deposit eggs on it is certain that it will attack strong ones. If there are any readers of the *Journal* who have found out a means of mastering the maggot or destroying the enemy in any of its stages, hundreds of persons throughout the country would be very pleased to hear of it, and I feel sure that the Editor would be pleased to give them a corner to relate their experience in.

I quite concur with the remarks made by "A Blait Bowkail" (page 139 of your last issue), that it would be a good thing if experimental schools could be established in the country, where

experiments could be carried out in order to prove the efficacy of the various scientific discoveries, and where also reliable men could make experiments with the object of making new discoveries. The results of their investigations could then be handed to the public in a concise form, and it would be information that could be relied upon—something that the practical gardener of the present day needs, for there is so much expected of him nowadays, that he has no time to make experiments for himself, and as your correspondent says, as that duty belongs to nobody we have to rely upon whoever may think well to take it up.

Some of the leading nurserymen have done a great deal for us in that way, and also there are not a few amateurs who, having a fair share of time at their disposal, and being interested in horticultural pursuits, or perhaps the cultivation of some particular class of plants, have spent a great deal of their time, and money too, in making experiments with them for finding out the best possible means of growing them to perfection. We also find that as a rule if they do make any new discoveries they are always ready to impart the knowledge they have worked so hard for to the benefit of their fellow men; but I think the time is coming when we must have a better means for making scientific research than the present haphazard one.—W. S. E.

[Very readily shall we afford space for records of experiments and successful practice in combating the destructive enemy of one of our most useful food crops. One of the simplest methods we have found of mastering the maggot is to sow ordinary so-called spring Onions in the autumn, mulch the ground in the spring with spent hops, and spray the plants a few times in the evening with soapsuds and petroleum as the fly emerges for the deposition of eggs. Experiments with Onions have been conducted in Somersetshire, and we expect to receive a report in due course; in the meantime we shall be glad to hear what our readers have to say on mastering the Onion maggot.]

PLANTING YOUNG VINES.

It is important that Vines to make good progress should be properly planted. A little trouble spent in doing the work well is more than repaid by the superior crops of fruit obtained. Hasty and improper planting is conducive to failure. Vines are expected to last at least fifteen years in good condition, indeed double that period is not considered too long, provided the crops of fruit annually taken from them are satisfactory. Nowadays there is such a rage for large bunches of Grapes that many Vines are renewed long before they are actually worn out. No hard and fast date can be named when Vines should be planted; so long as the work is executed before the new shoots burst into leaf no harm is done. Many Vines are planted with new growths a couple of feet long, but these are Vines raised from eyes during the current year, the roots of which are not parted from the soil as in the case of planting canes that are a year old. As a rule the present is a good time for planting where the border is inside the house. If Vines are planted in February the border ought to have been made at least a month, preferably two months. Allow time for the soil to settle down near its finished level. The soil on the top of the new border should be made firm, but not trodden if it is in a wet state, or it will be in a close sodden condition, not favourable to the quick rooting of the Vines.

The best Vines for planting are those raised from eyes the previous year, restricted to one stem during the summer, and thoroughly ripened under full exposure to light and air in the autumn, finally standing them out of doors at the foot of a south wall to complete their maturation. In such a position the Vines may remain until required for planting, provided the roots are safe from frost by covering the pots with stable litter or leaves. At planting time the soil should be just moist, as in this state it leaves the roots better than being either dust dry or very wet. The

process of disentangling the roots is then easily carried out. While some persons do not advise the removal of every particle of soil from the roots at planting time, I am a firm believer in this practice, thinking that the larger the space occupied by the roots in the border the better.

The canes will be probably 6 feet long, or perhaps more, but for convenience in planting this length of stem may be reduced to 2 feet. This is best done soon after the leaves fall. Spread out the roots as thinly and as straight as possible on the surface of the soil. Many of them may extend 4 feet or perhaps more. If the border be on the combination principle, part in and part out, some of the roots should be spread in the direction of the arches for the outside border, but the bulk must be disposed to occupy the inside border. They should be thinly covered with fine soil and about 2 inches of coarser material over that, pressing it down firmly with the hand. In three or four days, if the soil show a tendency to become dry on the surface, give water at a temperature of about 90°. A mulching 2 inches thick with partly decayed stable manure, sweetened by turning, will maintain the roots in a moist state, and act as an inducement to keeping them near the surface. Instead of treading on a newly made border, especially in a wet state, lay down boards to walk upon. The roots take much more readily to the soil when in a firm but not a soddened state than they do to a light medium. Place a stake to each cane to prevent its moving about and being injured.

In a general way one rod only is allowed to each Vine. It will not be advisable to cut the cane further back after planting, as it might show a tendency to bleed rather too much, thus weakening the future growth. Remove two or three of the buds near the point of the cane, and when it can be seen that those at the base are swelling freely remove all but two nearest the base. One only is required to furnish the ultimate rod, but it is wise to retain two as a safeguard in case of damage to one by slugs or from any other cause. If one only were retained the loss of that would cripple the cane for the year. When these two shoots reach from 4 inches to 6 inches long they are pretty safe from slug attacks, as seldom do these pests attack them afterwards. I always keep the surface soil about the Vines sprinkled with soot as a preventive against these marauders by night, they being especially fond of succulent Vine shoots. The 2 feet of stem denuded of its buds will be useful to tie the shoots to, as it need not be cut away until next pruning time. I omitted to say that about 4 inches from the front wall is a suitable distance to plant the Vines.—E. MOLYNEUX.

CELOSIA PLUMOSA.

ALL who have had the pleasure of seeing this plant where it is made the subject of careful and skilful cultivation, will readily admit that more attention should be devoted to it by a larger circle of growers than is the case at present. When well grown it will rank high amongst our showiest and most useful decorative plants. In respect to treatment it is not very fastidious, although where the best results are aimed at rather more than ordinary care is certainly necessary. This will be amply repaid by the result, and the little extra trouble should never be begrudged. Many persons when first seeing this plant in a condition bordering closely on perfection are so attracted by its beauty that they resolve to essay its cultivation, but the result is often disappointing, because they had failed to make themselves acquainted with the methods employed.

This failure in obtaining information from successful growers arises from various causes, the most prominent being a fear of displaying a lack of intelligence by inquiring. This cannot be too greatly deplored, for much valuable time is often lost in endeavouring to find out for ourselves those methods which the growers would give on application either personally, or what is far better, through the medium of the gardening press. By some few persons the practice of others, no matter how successful they may be, is considered unworthy of imitation, especially when the plant under consideration happens to be one with which they themselves have failed. That this is so, strange as it may seem, is too painfully apparent in the cultivation of many plants. A more foolish policy to pursue it would be hard to imagine, for it resembles more than anything else a groping in the darkness for an indefinite period after something which could readily have been found at the start if due advantage had been taken of, and not contempt expressed for, the light. Persons holding such opinions should always, whenever found, be regarded as objects of pity, for they are generally as ignorant as they are bigoted. It is not with the hope of enlightening this section of the garden fraternity that these notes are written, but of stimulating a greater interest in the cultivation of *Celosia plumosa* amongst persons desirous of growing it to a high state of excellence.

The first consideration must be, when it is that the plants are needed in bloom. This should always be decided before the seed is sown, as no interruption or check must occur between this and the flowering period beyond that occasioned by the plants remaining in small pots until the plumes are distinctly visible. If the beginning of August be the time fixed upon, the seed should be sown about the fourth week in March, or a period of about four clear months should always be allowed from the date of sowing. Do not sow the seed too thickly, as this will dispense with the trouble of pricking out the seedlings, which can be allowed to remain in the seed boxes until large enough to place in pots. Use a compost of equal parts loam, leaf mould, and sand, and cover the seeds lightly with fine soil; thoroughly watered, and placed in a temperature of about 70° until germination has taken place, when remove to cooler quarters, placing the boxes near the glass. This will be conducive to a sturdy growth, which is to be desired.

When the seedlings are 3 inches high they should be placed singly in 3 or 4-inch pots. With the addition of a little decayed manure the compost already advised will do for this potting, as much growth is not by any means desirable until after the final potting has taken place. For a few days after potting the plants must be kept close to enable them to become established in the new soil, but when this has taken place a temperature of 55° to 60° will suffice. From this time onwards the plants should be kept in a light position, watering and ventilating judiciously. Let them remain in their first pots until the plume is visible, which is a great help in determining the different shades.

Pots of 6 and 7 inches in diameter will be large enough to flower the plants in; the smaller size should be used for the yellows, as these are generally weaker in growth than the scarlets and crimsons. For this potting the following compost will be found suitable:—Three parts fibrous loam, one horse droppings (not too fresh), one part rough leaf mould, and one part of coarse sand, which should be slightly increased or decreased according to the nature of the loam. When the plants have become established, any house or frame where a minimum temperature of 55° can be secured will suit them; abundance of air should therefore be left on day and night when the weather will permit. If possible all air should be admitted at the top of the house, this effectually prevents sudden draughts reaching the plants, which is so often the experience from front or side ventilation.

Watering must be done with discretion, as the fine roots of these plants are very susceptible to injury if the soil is allowed to become soured by unnecessary applications of water; yet at no time must water be withheld long enough to cause flagging. To avoid risk of accident it is advisable at this stage to support each plant by fastening it to a small stake. If the largest plumes are desired all the side shoots should be taken off immediately they appear, but generally these are allowed to develop and form with the central plume a gorgeous head of colour. When the plumes have become expanded less water is needed. With the above treatment consistently followed central plumes of from 8 to 18 inches in length should be the result. Much, however, depends on the strain, and care should be withheld to secure the finest procurable, which when once obtained may be preserved, a selection being saved from the finest plumes every year to accomplish this purpose.—SASSENACH.

BIRDS AND CATERPILLAR MIMICRY.

WE are all of us as gardeners familiar with the fact that many of the caterpillars that work mischief to our plants and trees are difficult to detect; often we see the damage done, but the offender has made himself scarce. A host of species, chiefly of small size, conceal themselves in buds and flowers, in folded or curled leaves. It is the habit of other caterpillars to leave their food by day, retiring into nooks and crannies, or descending to the earth, and others there are which escape notice by what we call mimicry—that is to say, that by peculiarities of form, of marking, or of colour, they bear resemblance to the vegetable substance upon which they are resting, and so seem to be a part of it, especially while they are motionless. There are, however, some instances where even in the act of feeding caterpillars are unnoticed, owing to their disguise and cautious movements. The object of this mimicry has been assumed to be the protection of the insects from their foes, by which otherwise a brood might be exterminated; but it has lately been questioned whether there is much weight in the supposition after all. It is a point not without interest to gardeners, for their efforts to keep under destructive species are largely aided by the natural enemies of many of these. Certainly, as far as regards parasitic insects that attack caterpillars, they are not likely to be deceived by caterpillar mimicry, since they pursue their victims by the sense of touch or hearing, perhaps by smell

also, not depending on sight alone. Birds may appear to rely more upon sight, but many of the insect-eaters show themselves clever in detecting caterpillars hidden within rolled-up leaves, and they will pull chrysalids out of cocoons in which they are encased. Some very showy caterpillars, such as those of the shark moths, do not attract birds, nor does the yellow and black species that strips our Gooseberries, excepting the cuckoo, which is said to devour them; it has recently been stated the sparrow does, too, but the evidence is doubtful.

Still, the common sparrow is an extensive eater of insects, caterpillars amongst them. This is allowed even by its enemies, and as bearing upon the protectiveness of mimicry in insects we note the fact that most years the bird probably clears off numbers of the butterfly caterpillars which damage our Cabbages and allied plants. The more troublesome of the two familiar species is *Pieris Rapæ*, a feeder not only upon vegetables but various garden flowers, and the caterpillar is easily overlooked by anyone not an entomologist. Its green and yellow tints are inconspicuous, and it reposes with the body pressed against a leaf; but its resemblance to a part of the plant does not prevent a sparrow from detecting it, though the bird may find speedier the large *P. Brassicæ*, which has the bluish-green skin decorated with black. In two groups of small butterflies we have singular examples of mimicry. The caterpillars of the hairstreaks much resemble woodlice, and those of several blues are like small shells; but these are not seen in gardens, so we have not made sufficient observations on them to know whether they escape birds by their odd aspect. Passing to the moths, those of the *Sphinx* tribe have taken their former name from the habit they have of reposing with the hind segments firmly fixed on a twig and the front segments raised in the air. Amongst some of the *Bombyx* tribe, such as the puss moth, a like habit prevails. These caterpillars have many of them bright colours; sometimes they are conspicuously striped, and I doubt whether their seeming rigidity would deceive a hungry bird. One of them, nearly full grown, would furnish a good meal. That of the Privet species, common upon our hedges, if not for fear of birds, for some reason feeds chiefly at early morn and dusk, retiring by day to the interior of the bush. The caterpillar of the death's head, again, hides by day under the earth, and a similar mode of concealment is pursued by others of the tribe, which suggests that they too are liable to be devoured occasionally. But I fancy, as a rule, birds prefer moderate sized caterpillars to big ones, and the latter, with very few exceptions, are not the cause of harm to garden plants or shrubs, their food being elsewhere; it is the small species that give us such trouble.

Amongst the geometer moths there are a number of the caterpillars that closely resemble twigs, not merely in colour, but from having bodies angled or adorned by little protuberances. One that is a feeder upon Honeysuckle, several fruit trees, and the Elder, is the brownish-yellow caterpillar of the swallowtail moth, a very abundant species; but it also eats low-growing plants like the Forget-me-not, where its twig-like aspect is no protection from starlings and other birds that seek insects near or upon the earth. The caterpillars of the Thorn moths are often brown and humped, which makes them deceptive when at rest, and many geometers are fond of raising themselves straight in the air, holding on by the last pair of claspers; even if touched they will remain rigid, which suggests that it is a mimetic attitude. Some of them, however, have colours which attract the eye, and it seems probable that a hungry bird would soon discover they were not inanimate objects. But birds, why, we know not, pass by conspicuous caterpillars, such as, for example, that of the brindled beauty moth, which is purplish-brown, red and yellow, abundant enough about our London squares upon the Lime and several other trees, but none of the birds appear to notice it, nor do they meddle with the showy caterpillar of the mottled umber moth, a dweller upon various shrubs.

In gardens occurs the dull grey caterpillar of the willow beauty moth, which closely resembles a fading leaf of Rose or Plum, upon which it frequently feeds. The caterpillars of the emeralds are green like the moths, their colour closely approaching that of the foliage they consume, and some of the lichen-eating caterpillars vary in tint to correspond, as it is assumed, with the appearance of their food. Many grey or brown caterpillars select for their day's repose a place on a tree-trunk or bough, much of their own colour, where they draw themselves flat, ascending to the twigs after sunset. Amongst the fat-bodied moths that have caterpillars destructive to the stems or crowns of herbaceous plants we notice in several species a colour of the body which approaches that of the food, though the insect may hide by day, descending amongst the roots. On the whole, I do not think that caterpillar mimicry or disguise affords them much protection from birds, but they often escape by dropping suddenly from a thread if danger is near.

What gives undeniable protection to many species is a clothing of hairs or spines, which act as a deterrent to most birds. Another noticeable fact is that the webs formed by gregarious caterpillars answer the purpose of a safeguard. I particularly noticed last summer, in gardens swarming with nests of the small ermine moth, the numerous birds around did not take any notice of them. Birds do not seem to interfere in the usual way with the winter moth caterpillars when they have spread their threads on the trees, though they hunt them eagerly enough soon after they are hatched, while living in the early buds of fruit trees, and open too many buds by mistake.—ENTOMOLOGIST.

EXHIBITING HARDY FLOWERS.

DURING the months of December, 1892, and January, 1893, there appeared in the pages of the *Journal of Horticulture* several letters on this subject, and when I wrote to certain experts for their lists of the best herbaceous perennials for exhibition, I also asked for their opinions as to the most effective manner of staging the flowers, also as to the "wording" or the terms to be laid down in the schedules. The question of the size of the tubes was also brought forward. There was a general complaint that very many stands of these flowers as exhibited at the provincial shows were wanting in graceful arrangement, and so crowded or "lumped" together that the natural habit of the plant was completely hidden, while foliage was not only a minor consideration, but altogether disregarded. Again, it was stated by others that if you are to exhibit spikes of these flowers showing its natural habit of growth, then the general effect of the stand will be bare and thin, and the *tout ensemble* of the staging wanting in colour and massiveness. Your correspondents, Mr. S. Arnott, "Y. B. A. Z.," and "A. D." advocated 2-inch tubes, as against a 1-inch advocated by another correspondent.

I will gather up briefly the result of my inquiries without mentioning any names, but my correspondents are at the "top of the tree" among exhibitors of herbaceous perennials.

One of them writes: "A schedule ought to be worded against size, as I often find immense bunches with poor variety, lacking colour and rarity, receiving a higher award than a stand of smaller bunches, but having greater variety, colour, and quality. Twelve bunches should not be allowed more than 3 feet by 4 feet; thirty-six not more than 4 feet by 12 feet. Bulbous plants should be admissible."

Another writes: "With bunches of hardy perennials and bulbous-rooted plants, distinct, I would allow more than one variety of such flowers as Delphiniums and Irises. These are mostly so distinct, and a very pale sky-blue Delphinium, for instance, gains beauty when contrasted with a deep violet blue one placed at a distance in the same stand, and shows people what a fine range of colours there is in suchlike classes of plants. As regards the size of the bunches, to reduce these down to what a 1-inch tube would hold would be to destroy the effect they have in a show compared with the massive effect such as our firm stage. We spread the flowers out by wedging in moss so that the individual blooms stand out well. The largest bunches do not always win, for last year at three shows at least we were successful against bunches nearly double the size of our own so far as regards the number of flowers. If you reduce the tube to 1-inch nobody would care to look at them except, perhaps, the half a dozen enthusiasts. Managers of shows must be considered in this matter."

There seems to be a general consensus of opinion that the schedule might be worded as follows:—

For 12 bunches, 2 distinct varieties only admissible of any one kind

" 18	" 3	" "	" "	" "
" 24	" 4	" "	" "	" "
" 36	" 6	" "	" "	" "
" 48	" 8	" "	" "	" "

Of course, if the exhibitor puts six varieties of Lilies, Delphiniums, and Irises in a thirty-six stand, the judges, all other things being equal, would give the higher award to the stand with the greater number of kinds. But this is not likely to occur. Those who can show thirty-sixes and forty-eights would not spoil their stands in this way, but they might improve them by having, say, two Lilies, two Delphiniums, or two Gladioli.

It appears to me that the chief error to avoid in the wording of the schedules is that which confuses "variety" with "kind." As regards the size of the bunch, taste in arrangement and general effect is now so generally cultivated and has so marvellously been improved of late years as to have already influenced old-fashioned judges, while the younger generation of judges and gardeners, having naturally profited by the graceful arrangements of flowers

and table decorations which they have now seen for several years at many of our shows, may be safely relied upon, I think, to as a rule give sound judgment.—J. A. WILLIAMS.

[It will be perceived that the term "hardy flowers" embraces those which are not herbaceous, including Roses and other flowering shrubs which pass the winter in gardens.]



NATIONAL ROSE SOCIETY—GOLD MEDAL ROSES.

I AM glad that Mr. Williamson (page 145), and no doubt others also think it only right that our gold medallists and their Roses should have a page of honour allotted to them in our Society's publications; but surely it is neither advisable nor necessary (the omission having thus early been pointed out) that any delay, such as waiting for a new catalogue, should occur in supplying these descriptions, as a small part of the annual report and schedule could easily be assigned to describing such important awards. The schedules are usually issued in May, and this is February, so that there is ample time for all the information which is now asked for being put in type and properly tabulated; as the names of the medallists and their Roses have not hitherto been published all the information of the years long past should be clearly specified, as well as those of 1893. This correction should be promptly made—*Bis dat qui cito dat*.

SYNONYMOUS ROSES.

I congratulate the Society and the majority of the Committee on the good sense shown on the 13th inst. in restoring the synonymous Roses, which had been erroneously omitted, there having been no authority given to omit them, there was no special authority required beyond that of the Committee to rectify an obvious and serious blunder.

THE CLASHING OF ROSE MEETINGS.

Cannot this unfortunate clashing be in some way obviated? We have now three Rose fixtures arranged for the 27th June, and two for the 4th July. Every member who takes an interest of any kind in the "dear old National" will most naturally prefer to go to the Society's meeting at Windsor; but rosarians who have attended the meetings at Sutton and Farningham as I have (in the case of Sutton for eight or nine consecutive years) will regret that they cannot go on the same day to those pleasant places. In the same way, as I have before pointed out, Croydon and Reigate, both important fixtures, are clashing, and none but professional and big growers can send Roses to both places.

Could we not have for our Rose societies an annual day of meeting for delegates, such as is usual amongst the cricket clubs? The cricket club captains and secretaries meet at Lord's in the winter, and under the guidance of the M.C.C. Secretary, settle the principal fixtures, so that no important dates can clash. I do not think this has ever been suggested, but it is high time that the matter be taken in hand, and I think it is the only solution of a difficulty which has existed for years without anyone suggesting a remedy. If the National Rose Society had or has the power and position which it should hold, its decision on such questions would be accepted as final, and the secretaries and committees of smaller societies would see the propriety of everything being done for the general good of rosarians. Most of us, in the short time possible for the Rose to be seen in perfection, wish to attend as many Rose shows as are available, but none of us having the dual existence of Sir Boyle Roche's famous bird, can manage more than one Rose show per diem. More's the pity!

THE BEST TWENTY-FOUR HYBRID PERPETUALS.

It may interest your rosarian readers, as a recent election of a similar character attracted much interest amongst Chrysanthemum growers, to know the result of a small election recently held on the best twenty-four Hybrid Perpetuals. The electors numbered in all fifteen rosarians. Four of the selections used were obtained from those set forth in the recently issued number of the "Rosarians' Year Book," being the opinions of Mr. Foster Melliar, Mr. W. J. Grant, Mr. George Paul and myself, and the other eleven selections were sent to me by the following noted growers: Messrs. Burch of Peterborough; Benj. Cant, Frank Cant, O. G. Orpen, and Prior & Son of Colchester; Alex. Dickson and Sons of Newtownards, Ireland; Harkness & Sons of Bedale, Yorkshire; E. B. Lindell, Hitchin, Herts; H. V. Machin, Worksop, Notts; Henry Merryweather, Southwell, Notts, and Alf. Slaughter of Steyning, Sussex. Dr. Budd of Bath also sent me a list; although too late to enter in the analysis, his list agreed in great part with the final result obtained in the election. I left it open to the discretion of each elector to decide as to whether he would use or leave out the Hybrid Teas in his list of twenty-four Hybrid Perpetuals, and to this option and to the fact that Mr. Foster Melliar and Mr. George Paul did not mention any Hybrid Teas in their "Rosarians' Year Book" selection of best twenty-four Hybrid Perpetuals, may be ascribed the loss of three votes by La France. Fifty-nine Roses came into the election, of these twenty-eight had to be placed, this being caused by

the last five being bracketed equal. The names of those chosen as the best, and the votes they obtained are as follows:—

15 votes	{	A. K. Williams	10 votes	{	Dupuy Jamain
		Alfred Colomb			Earl of Dufferin
		Charles Lefebvre			Etienne Levet
		Horace Vernet			Comte de Raimbaud
		Madame Gabriel Luizet			Louis Van Houtte
		Mrs. John Laing			
14 "	{	Her Majesty	9 "	{	Duchess of Bedford
		Marie Baumann			Francis Michelson
13 "	{	Suzanne Rodocanachi	7 "	{	Général Jacqueminot
		Ulrich Brunner			Pride of Waltham
12 "	{	Gustave Piganeau	6 "	{	Dr. Andry
		La France			Duke of Wellington
		Merveille de Lyon			Lady Mary Fitzwilliam
11 "	{	Duke of Edinburgh		{	Marie Finger
					Prince Arthur

—CHARLES J. GRAHAME.

ROSE-GROWING UNDER GLASS IN AMERICA.

THE description given on page 145 last week of American methods as observed by Mr. G. Nicholson is very interesting. I have before heard of Roses planted out in shallow boxes, also that these clever Americans "strike" their own-root Roses from pieces of wood having only one "eye," and that "eye" being the top of the cutting, and out of the soil! Has Mr. Nicholson any description as to this method, or any description as to how they root their cuttings? It would be very interesting if information could be given through the *Journal of Horticulture*.—S. S.

EARLY GROWTH IN ROSES.

A GENTLEMAN sent me a piece of new growth, broken off a plant of Madame Berard Rose, grown on a south wall in the open air at Colwyn Bay. Although Colwyn Bay and Gateford are in about the same latitude, still I have no Rose on a south wall anything like as forward as this Madame Berard must be, from which the enclosed shoot was taken by Rev. J. H. Astley of Trinity House School (Colwyn Bay). It is probable that the earliness of vegetation in the west is brought about by the current of air conveyed by the Gulf Stream.—H. V. MACHIN, Gateford Hill, Worksop.

[The growth is 3 inches in length and the leaflets $\frac{3}{4}$ inch in diameter.]

LACHARME'S HYBRID NOISSETTES.

IN this class we have several Roses which figure among the Hybrid Perpetuals in the majority of catalogues. In a list of twenty varieties, Monsieur Lacharme is responsible for half. All of them are different shades of white; Boule de Neige, sent out in 1868, being probably the best. But there are two or three which are seldom met with, and which are thoroughly distinct and reliable. One of these, Madame Alfred de Rougemont (1863), is a great favourite with me. It is small, pure white at first, changing to a rosy flush at the edge; very free blooming and early. Coquette des Blanchés, sent out in 1873, is the most perpetual flowering Noisette I am acquainted with. A very hardy Rose, with a lasting flower of the purest white; a semi-climber. Madame François Pittet (1878) I expected to have seen much grown as a pot plant. I fail to see any reason why this Rose so soon dropped out of cultivation. It is free as the Fairy Roses, of short and compact growth, and literally covered with small pure white blossoms of globose form, and opening well. Baronne de Maynard, Coquette des Alpes, Lady Emily Peel, Louise Darzens, Madame Gustave Bonnet, and Perle des Blanchés were all introduced by the same raiser, and are very useful where white Roses for decoration are an object. Those which I have described are of a particularly lasting character.—PRACTICE.

COMMON GARDENING.

ON page 102 of the *Journal of Horticulture* "A. D." adroitly manages to introduce some remarks recently made to him by a friend, who appears to have spoken somewhat disparagingly of what he termed "the eternal talk of common gardening." "A. D." goes a step further, and suggests that his friend seemed to convey the impression, "that garden writing should now deal a little less with mere routine, and go back somewhat to first causes." By all means let us have writings on both the theory and practice of gardening, but to my mind the bulk of information given in gardening periodicals should deal in up to date methods of culture, which give safe and definite lines to work upon, instead of shadowy ideas which have frequently only a momentary existence in the imagination of the writer.

No one values more than I do the great advantages which we are continually deriving from the teachings of science; but these teachings have to be ground up as it were with everyday practice to prove thoroughly useful to the majority of readers, whose positions depend upon their supplying consumers with the produce they require. If they fail in that, no amount of scientific excuses and statements of operating causes will be of much service. I have lived long enough to find out that it is not the men who have the greatest amount of knowledge that make the most progress in life, because the world does not judge by knowledge,

but by works, and no amount of reasoning as to first causes will produce such good results as a sound practical acquaintance with the best methods of culture, and the conditions under which each is the most applicable.

To support these assertions we have only to look around and note what is being done in the horticultural world. A few years ago it was the fashion to maintain that the climate of Britain was not suited for fruit culture; but a few earnest practical cultivators paid special attention to the matter, and amply demonstrated by their splendidly grown exhibits that we had been labouring under a delusion. Practical and persistent writings denouncing the easy-going loose methods of culture too long practised followed, books and pamphlets suitable for small holders and extensive fruit growers giving precise and detailed methods of culture in time made their appearance, new life was infused into the neglected industry of fruit growing, and who will now deny that the Briton at home can produce some of the finest hardy fruits in the world?

Take the history of the Chrysanthemum during the last few years as another illustration of what a great all-round improvement has taken place in the growth of these popular flowers since the publication of the sound, practically written books sent out by successful cultivators. The pages of these works have been studied by thousands of gardeners throughout the country, who have placed implicit faith in the detailed instructions therein given, acted upon them under the guidance of their reason and perceptive faculties, and reaping their reward in the shape of more perfect produce. This, I think, clearly proves there is ample justification for the "eternal talk of common gardening," which is of far more value to a practical man than prosy discourses on operating causes, which more often lead to unsolved mysteries than to the establishment of facts.—A WORKER.



CALANTHE BARON SCHRÖDER.

MANY hybrid *Calanthes* have been raised during the past few years, but none perhaps can surpass the above mentioned kind for richness of colour. *Calanthe Baron Schröder* is said to be the result of reciprocal crossing between *C. vestita oculata gigantea* and *C. Regnieri*, and it is a most beautiful Orchid, one of the finest dark-coloured forms in cultivation. The sepals and petals are rich purplish crimson, while the lip is of a dark shade approaching maroon crimson. Fig. 25 represents this splendid *Calanthe*.

CYMBIDIUM TRACEYANUM.

THIS plant was introduced accidentally along with a batch of *C. Lowianum* and flowered for the first time in 1890 in the collection of Mr. A. H. Tracey, an Orchid dealer of Twickenham. It afterwards became the property of Baron Schröder, who, "I am informed on reliable authority," says Mr. Watson in the "Garden and Forest," "would not now take 1000 guineas for it. Only the one example of it is known, and this is now a splendid specimen. It flowers freely, having produced three very strong spikes last year. One of these spikes was exhibited among a group of Orchids shown some time ago by Baron Schröder. It bore seventeen grand flowers, each fully 5 inches across, powerfully fragrant, the elegant sepals an inch wide and nearly 4 inches long, and the lip as large as that of *C. grandiflorum* (Hookerianum), to which *C. Traceyanum* is closely allied: The colour of the sepals and petals is pale yellow, with streaks and dots of crimson, the lip being cream yellow, with crimson spots on the reflexed front lobe, and crimson lines on the upright rounded lateral lobes. The large waxy-looking column is cream white with a purple tip. This is a magnificent Orchid, and, compared with some high-priced favourites, I should say it is quite worth the value put upon it by its owner."

ORCHIDS AT ROSELANDS.

I RECENTLY had the pleasure of visiting the gardens of W. Furze, Esq., at Teddington. The day was a very wet one, but the warm welcome afforded both by Mr. Furze and his gardener, Mr. Coombs, quickly dispelled all depression on entering the structure devoted to Dendrobiums. Both master and man are Orchid enthusiasts, and devote many hours of thought and labour on their pets. But it must not be supposed that because they grow Orchids so well that other plants are neglected. Not at all. Mr. Coombs is well known as a successful exhibitor of Chrysanthemums, and there are now at Roselands upwards of 500 sturdy plants,

which promise to afford some good blooms during the autumn months. Then there are Freesias in fine form, Hyacinths carrying strong trusses, Carnations, Primulas, and many other plants, all bearing the impress of skilful and persistent attention. The garden, too, looks clean and tidy. On the conservatory wall a plant of *Pyrus japonica* was literally covered with its brightly coloured blossoms, and formed a cheerful object for one to see on such a miserable day.

But let us return to the Orchids. It was to see these that the visit was made, and it is intended to mention a few of those in



FIG. 25.—CALANTHE BARON SCHRÖDER.

flower, which appeared to be of more than ordinary merit and worthy of more than passing attention. The Dendrobies formed the gayest and perhaps the most interesting display, though in this latter respect they were closely followed by the Cypripediums. No attempt will be made to describe minutely all the varieties in flower, as doubtless they will be well known to readers of the *Journal*. Prominent on entering the house were some handsome plants of *Dendrobium Wardianum* in variety, one of which, called by Mr. Furze *D. W. giganteum roseum*, was exceptionally good. The colours were that of the type, but were more highly developed, especially at the tips of the sepals and petals, which were of a bright rosy pink. *D. nobile* was represented by some charming forms, one or two of which were very fine. A plant of *D. Dominianum* was noticeable, as also was a specimen *D. caulescens* carrying

upwards of 150 blooms. In the same house was blooming *Dendrobium Phalaenopsis Schröderi*. The *Cattleyas* and *Lælia purpurascens* in variety are in splendid health, and cannot fail, unless something totally unforeseen occurs, to afford an abundance of flowers later on.

We now turn our attention to the *Cypripediums*, and are soon poring over some handsome flowers. Amongst the best were *C. politum*, *C. Sallieri*, *C. pavonium inversum*, *C. Dantheri superbum*, *C. villosum* in var., *C. callosum* (which was grandly represented), *C. Lathomianum*, *C. Pallas*, and *C. Schlimi*, which latter Mr. Coombs remarked was very popular as a buttonhole flower for gentlemen. *Cœlogynes* were in splendid condition, and the same may be said of *Masdevallias* and *Sophronis grandiflora*, of which Roselands possesses a very brightly coloured form. In the conservatory *Cœlogyne cristata* was flowering profusely, as also was a grand form of *Cypripedium Boxalli*. There were numerous other plants equally worthy of note, but time will not permit of mention being made of more at present.—VISITOR.



THE WEATHER IN LONDON.—During the past few days some showery weather has prevailed in the metropolis. Monday, however, was bright at intervals, as also was Tuesday, but Wednesday opened wet, and at the time of going to press it is raining heavily.

— **THE WEATHER IN THE NORTH.**—During the past week we had two dry days, when the weather reverted to the former alternation of rain and snow. There were 3° of frost on the morning of the 22nd, and the hoar frost was very heavy. The afternoon of the 23rd was very wet, and on Saturday heavy intermittent snow showers succeeded each other all day. Sunday was a very disagreeable day of wind and heavy rain, and Monday was wet throughout. The following night was very stormy and wet. Tuesday, however, opened with sunshine, a somewhat rare treat for weeks past.—B. D., *S. Perthshire*.

— **ROYAL GARDENERS' ORPHAN FUND.**—Messrs. W. Frazer and Jno. Miles, Southampton, desire to tender their heartiest thanks, on behalf of Seymour Small, his mother, and of themselves (as nominators), to all those subscribers to the Royal Gardeners' Orphan Fund who so kindly voted in their favour at the last election.

— **ROYAL HORTICULTURAL SOCIETY—THE FRUIT AND FLORAL COMMITTEE TRIALS, 1894.**—The Council of the Royal Horticultural Society has decided to make trials this season of the following plants in the Gardens at Chiswick:—1, By the Floral Committee—*Cannas*, *Clematis*, bedding *Begonias*, tree (perpetual or winter flowering) *Carnations*, Zonal *Pelargoniums* for pots, *Campanulas*, and Sweet Peas. 2, By the Fruit and Vegetable Committee—Strawberries (all sorts), Cauliflowers, new varieties of Tomatoes, Potatoes, and Peas. Growers and others interested in these plants are hereby invited to contribute examples for this purpose, and to be good enough to forward the same to the Superintendent, R.H.S. Gardens, Chiswick, as early as may be convenient. Full particulars may be obtained on application to the Secretary, the Rev. W. Wilks, Royal Horticultural Society, 117, Victoria Street, S.W.

— **PRESENTATION TO SIR J. B. LAWES AND SIR J. H. GILBERT.**—The Council of the Society of Arts attended at Marlborough House on Friday last, when the Prince of Wales, President of the Society, presented to Sir John Bennet Lawes the Albert medal, and a like medal to Sir J. Henry Gilbert, awarded to them in 1893 "for their joint services to scientific agriculture, and notably for the researches which, throughout a period of fifty years, have been carried on by them at the Experimental Farm, Rothamsted. Several distinguished members of the Council were present.

— **WE REGRET** to announce the death, on February 16th, of Mr. J. LOVEL, the son of Mr. W. E. Lovel, the celebrated Strawberry grower of Weaverthorpe. The deceased gentleman, who was only thirty-one years of age, was a Fellow of the Royal Meteorological Society and a sergeant of the 2nd Volunteer Battalion East Yorkshire Regiment. Mr. Lovel was extremely popular, and his early death is the cause of wide-spread regret.

— **MONS. L. GUIGNARD** has been elected President of the Botanical Society of France for the present year.

— **COLLECTING IN THE CAUCASIAN ALPS.**—M. Alboff, who has been collecting for the past six months in these mountains for the Boissier Herbarium, has returned with large collections of plants.

— **DEATH OF MR. G. W. CHILDS.**—Horticulturists on this side of the Atlantic are not unacquainted with the name of Mr. G. W. Childs, who died on February 3rd of paralysis, after an illness of a few days. Mr. Childs was President of the Pennsylvania Horticultural Society, and took great pride and interest in the exhibitions.

— **QUEEN WASPS.**—In reply to Mr. C. Bellwood, I may state I killed on 13th January a large queen wasp in one of our greenhouses. This is the earliest I have ever met with. The day was very warm with a strong sunshine.—R. SCOTT, *Moorfield, Bradford*.—Mr. H. Brookes, The Gardens, Parkholme, East Sheen, caught a queen wasp on 10th January, and Mr. S. Bigwood, Summerhill Gardens, Elstree, informs us he secured one on February 7th.

— **NATIONAL FOOTPATH PRESERVATION SOCIETY.**—The annual report of this Society has been issued, and proves once more how serviceable it is in maintaining public rights over footpaths in country districts where popular feeling, if unaided, is powerless to prevent encroachment.

— **GALVANISED WIRE—PEACH AND NECTARINES.**—Have any readers of the *Journal of Horticulture* experienced any ill effect from galvanised wires to the Peach and Nectarine? Under my charge are Peach and Nectarine trees planted in houses. I found on examining them one day this last week a number of the shoots that came in contact with the wires looked as if they had been burnt. At the exact place where the shoots have touched the wires they commence to die. I shall be very pleased to know if it would be owing to the sharp frosts we have had or not. I also found on the wires little balls hanging like drops of frozen water. I may state that there is no artificial heat to keep out frost.—D. J. H.

— **THATCHED WALLS.**—I think the practice of covering walls with a coping of straw thatch, to which "X." makes reference, is limited exclusively to erections of clay, commonly called mud walls, or to those of lime concrete. Both of these materials are of a pervious nature, and need some protection from the heavy rains and frosts. Really good cement concrete is very impervious and enduring, but the better made the more costly it is. For the keeping of Potatoes and Apples well made clay-wall sheds, thickly thatched, are the best possible. When walls are some 12 inches thick and low, and are overhung by a dense coat of thatch, they are secure from frost and from changing temperatures. In some districts these may be erected at a trifling cost.—A.

— **EXAMINATIONS IN HORTICULTURE.**—We are reminded that the Royal Horticultural Society—sympathising with the efforts of various County Councils, Technical Institutes, Schools, Gardeners' Improvement Societies, and other bodies to promote instruction in practical horticulture—have consented to hold an examination of students on May 1st. Persons in any part of the kingdom appear eligible—gardeners, amateurs, cottagers, and allotment holders—to strive for the silver-gilt medal and certificates on payment of a capitation fee of 3s., whether they have attended lectures or instruction classes or not. Particulars can be obtained on enclosing a stamped and directed envelope to the Secretary, Royal Horticultural Society, 117, Victoria Street, Westminster, S.W.

— **GARDENERS' ASSOCIATIONS.**—I have been surprised to learn that in all the county of Hants there should so far have been only three gardeners' mutual improvement associations in existence—viz., Winchester, Bournemouth, and Botley. The gardeners of Shirley, near Southampton, have, however, resolved to do something to remove that reproach, and therefore last week held a meeting, which was well attended, and then and there agreed to form a gardeners' association for the district. I may observe that an old and highly esteemed local florist, Mr. B. Ladhams, has been elected Chairman of the Committee, and that Mr. W. J. Hobby, the very active Secretary of the local horticultural society, is to be the Association Secretary. Thus the new body is fortunate at the outset in its officers. It is now for the gardeners to make their society into a living reality. They have to realise that in these days gardening is a progressive and an intelligent occupation, in the pursuit of which men need all the knowledge they can acquire. Some day I hope to see gardeners' mutual improvement associations develop into a great force in horticulture.—D.

— WE learn from the "North British Agriculturist" that the LANCASHIRE COUNTY COUNCIL have decided to take over a farm at Penwortham, at an annual rental of £400, on a lease terminable at five, ten, or fifteen years, for the purposes of agricultural experiment and instruction.

— JOHN BULL ASLEEP.—Under the above heading "American Gardening" says:—In a list of the gardening periodicals of the world published recently in a London gardening paper "we notice among those credited to America the names of some old friends that have been dead and buried for years. Of course, several of the youngsters that have been born or re-christened since John went to sleep are not included." The list of English papers was inaccurate too.

— EXETER GARDENERS' ASSOCIATION. — On Wednesday, February 21st, Mr. George, formerly head gardener to Lady Rolle at Bickton, and now a lecturer under the Devon County Council, related his experience as a lecturer, and referred to the good which he believed would result from the lectures on horticulture. He exhibited a number of diagrams of trees and insects, and showed the difference between good and bad pruning of fruit trees. The lecturer also had present a number of specimens to show the best mode of grafting. An instructive and interesting discussion followed.

— GRANITE SCRAPINGS FOR WALKS.—There are two objections to this material for walks; first, its dull colour, always objectionable in a garden; and second, its tendency to become soft and sticky after rain or frost. Now admitting that it has capital binding or hardening qualities when laid on paths as a surfacing, I recommend that to impart a brighter hue, and also to prevent stickiness when wet, that burnt clay or well broken red brick, made quite small, be thinly cast over the surface when partially set, then well rolled. That will make the paths bright and a first-rate walking surface. This material for the burnt clay resembles the broken brick, forms a capital surfacing. It is enduring, and the cement-like nature of the scrapings would bind it thoroughly.—A. D.

— LADY GARDENERS.—The daily contemporary which asserts that there are 5000 women engaged as professional gardeners in this country, has doubtless counted women labouring in market gardens and bouquetists in florists' shops. It would be very interesting to learn of any women who really are superintending gardeners, and what sort of work they perform. Men find it very difficult to obtain employment now as gardeners, and can hardly be disposed to look calmly upon the contingency of having women as competitors. The men know that only hard work, which women never could perform, has fitted them for the positions of gardeners, and they realise that the glibness of speech so characteristic of some pushing women cannot at all compensate for lacking capacity to do hard work, and of experience. We should like to have more reliable information.—GARDENER.

— INJUDICIOUS TREE PLANTING.—Having for many years been closely connected with timber and forestry, I naturally read Mr. A. D. Webster's article (pages 140-41) with much interest. I have found in my experience much timber "pumped" through defective drainage. Where there is stagnant water in the subsoil, although not apparent on the surface, trees may flourish for a few years, but ultimately decay long before the trees reach maturity. The roots soon penetrate pipe drains in plantations and choke them. My opinion has recently been asked regarding some unhealthy trees planted thirty years ago. Fir, Oaks, and other trees are stunted and useless, Poplars cankered, but Willows large and healthy. My advice in this case was to make artificial ravines, as deep as they could be cut. This practice I feel certain would in many cases well pay for the labour involved in the work.—W. T.

— UNIVERSITY OF CAMBRIDGE—AGRICULTURAL EXAMINATIONS.—Examinations for the Diploma in Agricultural Science and Practice will be held in Cambridge during the first week of July, 1894. These examinations will be open to persons who are not members of the University as well as to members of the University. Part I. will be in Botany, Chemistry, Engineering, Entomology, Geology, and Physiology, all with reference to Agriculture; and in Book-keeping. Part II. will be in Agriculture and in Surveying. The fee for admission to Part I. will be £1 ls. and for admission to Part II. £2 2s. The names of candidates must be sent to the Registry of the University on or before June 13th, 1894, and the fee transmitted at the same time. The Diploma will be granted to every candidate who has passed both parts satisfactorily. For further information application may be made to Professor Liveing, Cambridge.

— "CANCELLARYS."—I was amused at Mr. S. Arnott's rendering of the corrupted name of Calceolarias. About a dozen years ago a four-year-old girl of mine heard the name somewhere, and used it so persistently that it was difficult to get her to abandon it. Is not "Cancellary" common among cottagers in some localities?—READER.

— NYMPHÆA ODORATA IN MINIATURE. — A correspondent writing to a transatlantic contemporary says that there is a variety of *Nymphaea odorata* growing in a mill-pond at Hyannis Port, Massachusetts, which is an exact copy of the type, except that it is in miniature. Flowers of this little Water Lily are only half an inch in diameter, and the leaves, while they are perfect in shape, colour, and venation, are only $1\frac{1}{2}$ inch across.

— MONEY IN GRAPES YET.—I have not had the pleasure of writing you since October, 1891, when you kindly told me what was the matter with our Muscat Grapes. I am pleased to tell you that I have not been troubled with "spot" since, and I attribute it chiefly to the advice given from time to time in the *Journal of Horticulture*, and acted upon. Our Muscats have sold well this past season. We obtained as much as 10s. per lb., and 8s. for a great number of lbs. during December and January. But they were not wanted in very large quantities at the former.—S. BIGWOOD.

— ROATH PARK, CARDIFF.—The Mayor and Corporation paid an official visit of inspection to this fine new park on Friday last, and expressed satisfaction with the progress made by Mr. Harpur, the designer, and Mr. Pettigrew, the superintendent. The park is 120 acres in extent, and about thirty acres of it is formed into a garden of pleasure and education. All classes of hardy plants are to be grown, arranged in their natural order. The Royal Gardens, Kew, have, we think, very appropriately contributed of their surplus in the interest of botanical and floricultural education, to be conducted by the able "old Kewite," Mr. W. Pettigrew.

— GRITTLETON GARDENS.—On Saturday, the 17th, Mr. Read, who is leaving Grittleton, the seat of Sir A. W. Neeld, Bt., was presented with a beautifully illuminated address and silver inkstand by the garden employés, and at the same time he was the recipient of a handsome marble clock, subscribed for by the farmers and tradesmen of the neighbourhood. The address, which was suitably replied to by Mr. Read, conveyed the warmest expressions of esteem, and of regret at his resignation. It is to be hoped that a gardener of Mr. Read's well-known ability will soon meet with a suitable appointment. He is succeeded in the management of Grittleton Gardens by Mr. John Pitts, foreman at Witley Court, Worcestershire.

— CERTIFICATING APPLES.—The communications received from Messrs. Young and Iggulden show how justified were those members of the Fruit Committee of the Royal Horticultural Society who objected to the proposal to send any persons to examine a tree of a supposed new Apple which was thought to be so like to the Cobham. The objection was based on the belief that the persons in question might know nothing of the true Cobham both in tree, in growth, and fruit. Really there is no other right course in a case of doubt of this sort but to have grafts sent to Chiswick (if there be no young trees) for working, and there let the Fruit Committee as a body determine how far the variety may be new or otherwise. But the mere fact that the fruits bear so close a resemblance to those of the Cobham that experts can hardly detect any difference, naturally leads to the conclusion that with our existing wealth of fine Apples there is no necessity whatever for varieties that are if really distinct, yet little better than reproductions of old kinds. It is a serious matter enough to "hall mark" an Apple with an award of merit, although that simply means that it appears to be a meritorious variety. To give any sort the mark of a first class certificate is, however, far more important, because whilst perhaps adding nothing of appreciable value to our already overburdened Apple lists, is practically presenting to the vendors of the variety so many pounds sterling. Is it not, therefore, needful that any award to an Apple should be only to merit of the most exceptional kind, something that renders it an actual improvement on existing sorts? Mr. Young's final sentence, "Too much care cannot be taken in awarding certificates to Apples," I most heartily agree with, and for one Apple of exceptional merit we see forty or fifty, probably many more, placed before the Committee that are only of ordinary worth. I cannot see why every Apple thought worthy of an award of merit should not be grown at Chiswick and fruited before any farther award is made.—A. D.

— THE CASTLE STREET NURSERIES, SALISBURY. — A correspondent informs us that these old established nurseries have been purchased by Mr. John Wyatt and his son, Mr. Charles S. Wyatt, the transfer of the business dating from the 1st of January last. The business will be carried on as heretofore under the name of Keynes, Williams & Co., and practically under the same management, as Mr. John Wyatt has been connected with the firm during the last forty-three years, and Mr. Charles S. Wyatt for a period of twenty years, both in managerial capacities.

— WILTS HORTICULTURAL SOCIETY. — The annual meeting of the Wilts Horticultural Society was held in the Council House, Salisbury, on Monday afternoon, the Mayor (Charles Haskins, Esq.) presiding. The Hon. Secretary (Mr. H. Nicholson) read a letter received from the widow of the late Mr. Walter Henry Williams, acknowledging the letter of condolence which the Committee caused to be sent on the occasion of her husband's death. Subsequently the Mayor referred to the great loss which the Society had sustained in the death of Mr. W. H. Williams. Owing to the continued illness of Mrs. Wordsworth, the Committee decided not to ask the Lord Bishop of the diocese for permission to hold the annual summer Show in the grounds surrounding the episcopal palace, but request the Earl of Pembroke to allow the Society to hold its Exhibition at Wilton. The date of the Show was fixed for Wednesday, August the 15th. Mr. Charles S. Wyatt (of the firm of Keynes, Williams & Co.) was elected as Honorary Secretary, and Mr. H. Nicholson as Assistant Hon. Secretary.

— SPRAYING FRUITS. — The practice of spraying fruits with certain mineral compounds, such as salts of copper and arsenic, to destroy insects and fungi, has called out discussion in regard to the ripened fruit after such spraying, and its fitness for food. The first condition for intelligent discussion of any subject is to know the facts in the case, so experiments have been made on the matter at the State Agriculture College, Michigan, and "Bulletin" No. 101 contains the results. In these experiments, extending over two years, the minerals used in spraying the fruits were found in appreciable quantities in every instance, though the amount was small in all cases except when the spraying had been purposely excessive. The question naturally arises whether the sprayed salts merely adhere to the surface or penetrate the substance of the fruit. Experiments made to test this showed that while most of the copper salts, in the case of a solution containing copper sulphate, adhered to the surface of Pears sprayed with the solution, a portion found its way into the body of the fruit. Dr. R. C. Kedzie, who has made the analyses, remarks that the use of poisons in horticulture is largely in excess of the amount required for a fungicide. One-half or even one-third of the amount usually employed would probably give as good results. To be on the safe side no fruits should be sprayed with solutions of mineral salts during the period of ripening, for though the amount found in a single pound of fruit may be very small, repeated doses of the poison might produce slow poisoning.

— MULCHING VINE BORDERS. — I had not in my mind Vines to produce ripe fruit early in May when I penned my lines on this subject (page 85). I know perfectly well that a man is compelled to do the best he can when ripe Grapes are expected at that period of the year with the roots in a cold outside border. The roots of Vines for affording early Grapes should not be in such positions. I fear, with all my friend Mr. Dunn's care (page 153), the roots are not very active in an outside border until the season has well advanced. I have little faith in trying to drive heat downwards, but a mulching of some kind or other is necessary under such conditions. I should certainly try with very early forcing to keep the border from becoming frozen hard after the Vines were started. Very often two or three weeks' delay in starting is more than compensated for if early Vines and Peaches also can first taste frost before they are started. We can, it is true, only wait a certain length of time, and if we have no early frosts to assist us we are compelled to make a start without. — WM. BARDNEY.

— VIOLETS IN IRELAND — WHAT IS THE SIZE OF A SHILLING A PIECE? (page 126, February 15th, 1894.)

The size of a shilling apiece is the size,
To go very near without telling lies,
Of a lump —
Say of chalk, or of clay, or of coke,
Or the string that you tie up the pig in the poke;
With the depth and the breadth of a practical joke,
Or a stump
Speech that is made by a parliament man,
Or the size of a hole in an old water can.
The riddle is solved, so do not be troublin';
I've put it all right, says PALDY, from Dublin.

— RATES FOR THE CARRIAGE OF FRUIT IN VICTORIA. — The revised rates for the carriage of fruit on the railways in the colony of Victoria are such as we could do with in England. They are, says a contemporary, 3d. per ton per mile for Strawberries, Currants, and Raspberries; 2d. for Peaches, Nectarines, and Apricots; and 1½d. for all other kinds.

— TECOMA JASMINOIDES. — I was pleased to see the reference on page 153 to the above plant. I have only seen it in one garden. The flowers, as you assert, are very pretty, and under certain circumstances borne freely; but if allowed too free a root run the possibilities are that it will not flower at all. The plant I saw grew freely, and flourished for some years without giving a single flower, large quantities having to be cut off the roof annually, and it was not until we dug round it, cutting its roots, and then had it confined to a given space, that we got any flowers. However, when the roots were confined in a somewhat limited space blooms were borne in the most gratifying profusion. — W. S. E.

— WHERE GISHURST IS MADE. — In the issue of "Commerce" for January 31st appears an exhaustive, instructive, and interesting account of Price's Patent Candle Co., Limited, Battersea and Bromborough Pool. Admirable engravings appear of different machines and departments at the two establishments. Curiously enough two of the most important products relating to gardeners, Gishurst and Gishurstine, both of which emanated from this factory, do not appear to be mentioned. Prominent in the front of the article are fine portraits of Mr. G. F. Wilson, F.R.S., his brother, and his father, the founder of the business, now a gigantic one, of which Mr. Wilson, the well-known amateur horticulturist, is a director.

— THE WAKEFIELD PAXTON SOCIETY. — On February 21st, at the weekly meeting of this Society, Mr. J. Thomas, gardener to the Bishop of Wakefield, read a well-prepared paper on "The Cineraria." This bright and useful greenhouse plant, he said, was introduced into England from South America about 1776, although it did not come into general cultivation until about twenty years ago. Some very practical information was given by the essayist as to the best methods of growing the plant. Several members took part in the discussion which followed the reading of the paper. Mr. George Gill presided, and Mr. Goodyear was Vice-Chairman. Notwithstanding the inclement weather there was a large muster of members.

— A STRANGE OMISSION. — Being desirous of getting all possible information concerning the proposed horticultural examination to be conducted by the Royal Horticultural Society in May next, and which, I observe is open to anyone, I have been referred to the information furnished in the R.H.S. schedule which has been sent me for the purpose. I am there enabled to see the syllabus of the subjects of the proposed examination, and which cover very wide ground. But when I turn to the list of text books advised for reference, I find that scientific rather than practical knowledge seems mostly to be in the minds of the framers of this book list, and so far it may be helpful for students in that section of subjects found under the heading "Elementary Principles;" but which are chiefly of a botanical or scientific order. When I turn to the second section, that which relates to "Operations and Practice," there I look in vain for text books in the list that are at all helpful. Where is there furnished any practical information on fruit culture, on vegetables, on landscape gardening, or garden plans, on trees and shrubs, and on many other things all of vital importance to horticulture? Where can help of the nature desired be found? Who will recommend books suitable and so oddly omitted in the published list? Surely the Royal Horticultural Society will supply the deficiency. If it does not, then I must appeal to you for advice in selecting proper text books on practical gardening, which many proposed candidates have so much need of. One would also like to know the probable cost of a well selected list. — NOVICE.

— ROYAL METEOROLOGICAL SOCIETY. — The monthly meeting of this Society was held on Wednesday evening, February 21st, Mr. R. Inwards, F.R.A.S., President, in the chair. Mr. R. M. Barrington, M.A., LL.B., Mr. C. G. L. Cator, and Mr. H. Owen were elected Fellows of the Society. The following papers were read — 1, "Temperature, Rainfall, and Sunshine at Las Palmas, Grand Canary," by Dr. J. Cleasby Taylor. 2, "Report on the Phenological Observations for 1893," by Mr. E. Mawley, F.R.Met.Soc. This is a discussion of the observations made on the flowering of plants, appearance of insects, and the song and nesting of birds. The year 1893 was in complete contrast to its predecessor, being very forward throughout the United Kingdom. The February and March plants were later than usual in blossoming,

especially in the colder parts of our islands, but after this the dates were everywhere in advance of the average, and during the height of the flowering season the departures from the mean were often considerable. 3, "Comparative Observations with two Thermometer Screens at Ilfracombe," by Mr. W. Marriott, F.R.Met.Soc.

THE EARL'S COURT PRIZE MONEY AGAIN.

I SHOULD feel greatly obliged if you would kindly insert in your valuable paper these few lines on the late fruit and floral exhibitions at Earl's Court. I am aware there have been several articles in the

and presentations the prize money should have been paid, and then if there was any surplus they might have feasted to their heart's content.

I have the names of several exhibitors who like myself have been put to great expense in the conveyance of exhibits, and in the event of a test case being instituted to see who is responsible for paying the prize money I shall be very willing to subscribe towards defraying such costs. —WILLIAM HOWE, *Park Hill Gardens, Streatham Common, Surrey.*

[If our correspondent had read all that has been published in this reference he would have found Mr. Turner's announcement of the death of the accountant long ago. We fear most or all the money may be dead too. We should be surprised if Mr. Milner did not reply to



FIG. 26.—SENECIO GRANDIFOLIUS.

various gardening journals respecting the exhibitions, which had the effect of bringing a reply from Mr. H. Turner, in which he publicly stated the prize money would be paid as soon as the accountant was settled, but as such a long time has elapsed since that announcement was made, I, in common with many other exhibitors, think it is time the prize money should be paid, which is due to us by those who were responsible for the issuing of the schedule and organisation of the various exhibitions, such as Messrs. Milner and Turner. It seems to me a very flimsy excuse that because one man is ill that everything should be at a standstill. If they know there is no money to pay the prizes with, why do not they publicly announce it in a straightforward manner?

I am afraid that any future exhibitions in which Messrs. Milner and Turner have any responsibility will not be patronised by the general body of exhibitors. Before the exhibitions were over I wrote twice to Mr. Milner, and he did not trouble to answer either letter, and to totally ignore, as he has done, those who assisted him at Earl's Court, is not what anyone would expect from a gentleman in his position.

I think before Messrs. Milner and Turner were feasted to dinners

courteously written letters, and agree with our correspondent that if there is no prize money to distribute, either Mr. Milner or Mr. H. Turner should make a public announcement to that effect. This, if the facts are as surmised, ought to have been done long ago.]

SENECIO GRANDIFOLIUS.

A LARGE specimen of this Senecio, better known perhaps to some readers as *S. Ghiesbreghtii*, was exhibited at the Drill Hall, Westminster, on the 13th ult., by Sir Trevor Lawrence, Bart., and a first-class certificate was awarded for it by the Floral Committee of the Royal Horticultural Society. It is an old plant, and in former years was more extensively grown than is the case at present. The flowers are bright yellow, and borne in a huge corymbose head, as depicted in the illustration (fig. 26). The leaves, too, are very fine, and, under favourable conditions, grow to large dimensions, enhancing the appearance of the plant considerably.



PACKING CHRYSANTHEMUMS FOR LONG VOYAGES.

I AM desirous of sending a few Chrysanthemums to a gentleman in California. I shall be much obliged if any correspondent can advise me as to the best mode of packing. I sent some to South Africa two years ago. They were packed in a tin box with a little damp moss, and, as I thought, soldered hermetically, but they arrived in a decayed mass.—E. B. H.

A GREAT CHRYSANTHEMUM TRIAL.

To many readers concerned with Chrysanthemums no doubt "Omega's" suggestion of an annual trial of all novelties by the N.C.S. will, doubtless, seem somewhat amusing and unpractical. That with existing resources the National Chrysanthemum Society could conduct such a trial is, of course, out of the question. Still the proposal is a very valuable one, and thousands of persons would be delighted to have such a trial made. As putting the matter into feasible and practical shape, I will suggest, and our friend Mr. Moorman can doubtless shed a little light on the matter, that the N.C.S. Executive propose to the London County Council to furnish to one of their parks—Battersea, Victoria, or elsewhere—in the early spring, plants of all the new varieties, catalogued, or likely to be submitted for certificates during the year. It should be a distinct rule that, assuming such a proposal could be carried out, no variety be allowed submission for certificate until it had so been grown for trial. If the London County Council agreed, their superintendent at the park in question being furnished with all these novelties, should give them the best possible cultivation, and grow them so that the best blooms might be produced, then present them all in his show house in the autumn duly numbered. There should be provided by the N.C.S. a cheap list giving numbers, names, raisers, and traders associated with each variety that would be sold at the park, and in that way not only would everybody have unlimited opportunity to see the Chrysanthemums, but the trial would be one of the fairest conceivable. So soon as the plants were out of bloom the owners should have the privilege of obtaining them if they desired. What is to be said with respect to this suggestion? Would not the trial prove to be the most attractive display in the kingdom?—A. D.

JAPANESE CHRYSANTHEMUM ELECTION.

I DO not think that "Omega's" (page 150) proposed substitute for the recent Chrysanthemum election will bear the test of critical examination. In the first place the establishment and maintenance by the N.C.S. of "gardens and trial grounds as the R.H.S.," for apparently the sole object of testing new varieties, would involve an expenditure which it is difficult to see how the N.C.S. could, as matters stand, undertake. But even if this preliminary objection were removed would the proposed test produce results at all comparable with those of the *Journal of Horticulture* election? I think not, and for these reasons.

A test in the proposed "trial ground" would be under but one condition of soil and atmospheric environment, and probably under but one system of culture. As we know certain localities by reason of soil or climate are compared with others not favourable to the highest development of a particular variety, so comparative failure in one locality may be consistent with conspicuous success in a great number of other districts. One of the chief advantages attending the recent election was due to the fact that the voters covered so very wide a range of country, from Scotland and Ireland to the south of England.

Again, the cultural treatment given by one grower, although judicious as regards the bulk of the known varieties, may not be the most suitable for the highest development of a new variety, the characteristics of which have yet to be discovered—*teste* "Mrs. Alpheus Hardy." Therefore, to suggest that if all new varieties were subjected to the same treatment the result would indicate their relative merits, would be to assert that which is contrary to our experience.

On the other hand the different systems of culture likely to be adopted by forty-two of the leading growers are certainly more calculated to bring out the finest development of the variety under trial, and with it a knowledge of the cultural conditions most conducive to success. I will assume that the cultural skill procurable at the headquarters of the N.C.S. would be equal to that of the best of the forty-two. Were it not so the test would, on this account alone, be of very doubtful value.

"Omega" points out certain apparent inconsistencies in the relative positions of certain varieties in the twenty-four and in the twelve. The reversal of the positions of Mdle. Thérèse Rey and Mdle. Marie Hoste is, I must admit, not easy to understand; but many of the others referred to by your correspondent are possibly due to the special requirement as to colour contained in the terms of reference. It is only natural, indeed inevitable, that in such an election some inconsistencies should appear; but, with all allowance made for such as are pointed out, surely the agreement shown in the late election is little short of marvellous when one remembers the vast number of varieties, new and old, offered for selection. Of the ultimate best twenty-four, one voter had

21 in his list, nine had 20, eight had 19, and ten had 18, the remainder close behind.

"Omega" says that in the election "some of the varieties occupy higher positions more from what report has said about them than from the elector's knowledge of their growth," and suggests that "some of the growers who were kind enough to assist in the election included varieties which they had not grown and had hardly seen." I imagine that a sufficient answer to this complimentary suggestion will be found in the fact that it is based on a claim to an omniscience which, I am inclined to think, will not generally be conceded to your correspondent. The suggestion is by no means justified by the assertion that one voter had inserted in the best twelve three varieties which he had not grown; for, as you have pointed out, the terms of reference gave the alternative of "grown" or "seen exhibited." Many cultivators may not last season have grown Mdle. Thérèse Rey or Robert Owen; but who can doubt, after what has been seen of these varieties upon the exhibition table, that they might be reasonably placed in the first twelve?

If the election is to be superseded it must give place to something fortified by stronger arguments and recommendations than is the proposal of your correspondent "Omega."—AMATEUR.

CHRYSANTHEMUMIANA.

VERY exhaustive and satisfying are the recently published analyses in the *Journal of Horticulture*, forming a nucleus of the opinions of the leading growers, converged rays of the leading lights from the four points of the compass. Here at a glance is seen how we stand, where we have come from, and possibly just lift the veil of the future to obtain an idea of where we are going, though it would require some straining of vision to see the goal. Perhaps there is some cause for self-congratulation that we are but yet in the transition stage, for at the present rapid rate of development who would be bold enough to say we are yet beyond it? As with other things, it must ever be the most interesting stage in watching the rise and progress of the subject under our hands with the consciousness of the power of man's mind over matter.

Some of the yet unconverted found their objections to growing prize blooms on the score of trouble; but on this head we have it on unimpeachable authority "that man is born to trouble," and it might be added, perhaps, gardeners particularly so, and I think if the argument was thrashed out it would take but little logic to disperse this objection into thin air. To me as a grower these *soi-disant* troubles resolve themselves into a labour of love; yet I will not deny that there are times when anxiety comes in. With, say, 500 plants there is necessarily some work and some time spent on them, but a little experience reduces that to a minimum, and I do not think the five-hundredth part of that time which each plant receives amounts to very much during their short season of growth, and this is the only time I feel constrained to speak up for them; when housed and in flower they speak for themselves. It will not be easy, if possible, to find a substitute that comes at such an opportune time to dispel, as these plants do with their many-tinted rays of sunshine, the gathering gloom of the waning year, and probably not any rival yet to come will possess the fascination held by the autumn queen over her devotees.

If wishes had wings, while warm on the subject I would fly to Fleet Street and entreat the powers that be to make the Chrysanthemum department a perpetual one, with not only a little weekly advice from the masters of the art for the guidance of pupils. There are always, I think, some little things we would like to know that keen observation discovers, and also things worth knowing in order to avoid, and above all there is during the working season that desire to keep in touch with other workers.

In analysing the analysis, even we within the charmed circle may admit that in the largest varieties of Japanese size has been obtained, yet there still remains a field for drilling up many of the regiment to review order. The chaste and elegant incurved do not arrive on the field in legions, and good recruits that come up to the standard are somewhat backward in coming to the front; and in this section is probably to be found much of the work of the future, whilst in both divisions there is ample scope for improvement on the lines already commenced—viz., by replacing the tall varieties with dwarf sturdy growers which keep their heads in the battle with the elements.

As with other phases of education, so with Chrysanthemum culture, there is no royal road to learning, and no short cuts "from the cutting to the silver cup." Granted that the beginner has that indispensable primer, Mr. Molyneux's book, which is invaluable in directing you on the road, there is much to be learned that can only be acquired in the school of experience. Competition is keen, and the race is run with trained athletes. Local conditions are working which must be taken into account and which only close observation can master. When the day comes, and we are pitted man against man, the beginner may find, previous to the verdict, that he is not in it. He has grown the big blooms, some are here, some are over, and others yet to come; he is, *pro tem.*, beaten but not disgraced, and must accept the inevitable with a good grace, for it is useless to talk of the big blooms that are over; if he does, it is heard with that amount of belief that fishing stories are credited with. The sensation is not pleasant, rather tending to disgust, which fortunately is only temporary; perhaps with any other class it might mean capitulation, but not with the Chrysanthemum—one is bitten or smitten, whichever term applies. In short it is an attack of the Chrysanthemum fever, due perhaps as other epidemics are to some form of microbe; for this there is no cure, nor indeed cause for alarm

the disease being benign—not malignant, and this temporary disgnst is bnt an early stage of the disorder.

One of those ill winds which *Chrysanthemum* growers dread caused some trouble—I may say trouble without implicating the mums—to an amateur friend last summer, who arose at 4 A.M. with his household, to the rescue at the sound of rattling pots. Later on when taking the well earned holiday of a business man, watering by deputy was not attended with happy results, consequently the report was—Disgusted! But note the sequel, he has returned to the subject with increased fervour, a larger greenhouse, the newest varieties, and starts the year with added experience and pleasures in prospective. Observation of a year's growth, a year's work, in which the uninitiated may think the pleasures are deferred until the climax, is not the case. In the earliest stages of existence they are certainly very much like other infants, but as they fatten in the legs, and develop individual traits of character, interest commences and grows with them; and what varied tints of green and variety in shape and disposition of the foliage is to be seen! And not less variable in their tempers, some so constituted that they greedily absorb all you provide for them, while others peevishly take offence at the veriest trifle.

One could wish these favourite plants had received a more euphonious name, one that could be used "trippingly off the tongue." Decapitation does not give the best sounding results, nor add to the dignity of queens and princesses when addressed as mum. Yet it is probable that the abbreviation now in common use will stick, and at the present, if not for all time, "Mum's the word."

To sum up, I do not think that trouble, so often hinted at in *Chrysanthemum* culture, need be the bogey to scare away those who as yet but peep over the hedge, and have not entered the field of the—

Glorious Autumn Queen, Flora's coming gem,
Of the swift seasons, as they roll away.

—E. K., *Dublin*.

RED SPIDER ON GOOSEBERRY BUSHES IN FEBRUARY.

CONSIDERING the vast amount of damage done to the Gooseberry crops last season allow me to point out what may not be generally known respecting the life history of red spider. I found out by the aid of the microscope last winter when giving illustrated lectures in technical education, that these pests hatch out from the red eggs which may be observed around the buds and spurs about the beginning of February, let the weather be ever so wet and stormy, and that although dry hot weather may suit them best it does not follow that they cannot put up with any amount of rain when secure under the sheath of the expanding buds.

As the spring advanced it was a common occurrence to hear people complain erroneously of the frost having damaged both the tender foliage as it expanded and of the fruit dropping, instead of understanding the real cause, until I called their attention to these pests either in the act of sucking the sap or lurking around and sheltering from observation in any convenient covering.

Later in the spring it was a pitiable sight to notice the acres of bushes in around Evesham and Pershore, with the foliage either looking seared and dried up, or the bushes naked and useless for the season, if not killed outright. At the Toddington fruit plantations vigorous washing was being carried out with "Kill-m-right," and right well it killed "m," as I proved on examination with my magnifying glass.

I have just concluded a course of ten practically illustrated lectures in horticulture under a Technical Education Committee in Warwickshire with a class which has been well attended throughout, and two evenings have been devoted to minute insect pests on fruit trees and bushes, illustrated under powerful microscopes. This not only creates much interest in seeing the insects magnified, but brings home to the members the existence and destruction of enemies they never even suspected, and especially red spider, which is already in strong force on some bushes, as I showed a fortnight ago.

I have cleansed Gooseberry bushes of millions of red spiders on a very simple plan, and with no expense save a little labour. Watching my opportunity for bright sunshine, which induces the spiders to emerge from their retreats and pass to the surface of the foliage, as may be seen by the naked eye, I spread rough cloths—hand-towels—under the bushes close up to the stems, wrapping over at the edges, procure a pail of water, get my syringe and swill them off with all my power, and gather them up and swill off into another pail of water, in which I souse the cloths and let the water run down in a stream. This is easy, efficient, and helps the fruit to swell into the bargain. This can be repeated in a week or month if found necessary. Whatever methods of riddance may be employed, earlier action than is generally considered necessary would seem to be of the first importance.—J. HAM.

CHRISTMAS ROSES.

THESE beautiful hardy plants are valuable both to the market and private grower, affording under very ordinary treatment a wealth of bloom at a season of the year when flowers are usually scarce. For wreaths, crosses, and other floral designs the blooms are preferred by many to the beautiful *Eucharis* on account of their durability. Much as the Hellebore dislikes to be disturbed at the root, yet there are times when new plantations must be made if the supply is to be maintained,

the crowns becoming exhausted in the course of a few years. A great deal depends upon the treatment the plants receive, but they will amply repay the grower for the extra care and outlay.

Hellebores thrive if planted in a good loamy soil in which some thoroughly decayed manure has been incorporated, and if possible in a somewhat shady and moist position. If the latter is out of the question, frequent soakings of water must be given during the summer months, and if liquid manure can be applied occasionally so much the better. To this treatment the plants will quickly respond, and afford a profusion of fine flowers later on. Division of the root is the best mode of propagation, which should be done some time during March or April, according to the locality. In lifting the clumps for dividing them do not injure the roots. Plant as quickly as possible about 12 inches asunder each way, in ground that has been previously prepared, then mulch with some short manure. Do not under any circumstances allow the roots to be exposed, so as to get dry before planting. This is only too frequently the cause of failure with imported clumps and crowns. Protection of some sort is necessary during the autumn and winter months, if clean and perfect blooms are wanted. Hand-lights, moveable frames, or even clean long straw, may be placed over the beds when the buds begin to push, and then a sharp look-out must be kept for snails and other insects.

If plants are required for growing in pots, lift the clumps in October, and place in fair sized pots so as not to cramp the roots. Put them in a cold frame or greenhouse where the flowers will rapidly expand, but the temperature should not exceed 45° or 50°, or the blooms will become drawn and the crowns considerably weakened. Plant out again in the following spring, where they should remain for at least a season or two. Very good results are frequently obtained by potting the clumps in the spring, plunging to the rims of the pots out of doors, and carefully watering the plants and transferring them to larger sized pots the following year. Treated thus, bloom may be had several seasons in succession from the same plants, but if in any way neglected failure is swift and sure, so that on the whole the planting out system is probably the safer.

Of the many varieties of *Helleborus niger*, *maximus* is the variety mostly sought after for floral work, the blooms being both larger and whiter than those of the other varieties. The Christmas Rose may be used as a rock plant, when placed in suitable positions the different varieties producing a pretty effect during the dull short days of the winter.—HEDLEY WARREN.

CLIMBING PLANTS.

MANY readers of the *Journal of Horticulture* will doubtless agree with me that some of the most beautiful and interesting plants in cultivation are to be found amongst our stove and greenhouse climbers. Is it not, therefore, surprising, that we should see so many bare walls and rafters in glass structures, which, with a very little care and forethought, might be furnished with a rich covering of leafage and bloom? I am well aware that there are gardens where great attention is bestowed upon the cultivation of climbing plants; but I must confess that as far as my experience goes these places are exceptions to the rule. If allowed to grow at random they are apt to form too dense a covering, thereby excluding sun and light, and this would not be conducive to the successful culture of the various plants beneath. I am convinced, however, that if the plants are attended to once a week for the purpose of removing all superfluous growths and regulating the remainder over the space allotted to them, better results would accrue.

The task of making a selection of climbing plants must be left to the cultivator, as much depends on the space at disposal, some kinds requiring more room than others. I will, however, mention a few climbers suitable for various purposes. For the roofs of large structures we have the *Bignonias*, *Passifloras*, *Tacsonias*, *Jasminums*, and *Tecomas*, the last named being, although little known, among the best of this class of plants. Where space is limited there are many plants that are suitable, and among them may be mentioned the *Dipladenias*, *Clerodendrons*, *Hoyas*, *Stephanotis*, and the *Streptosolons*. For walls and pillars we have such a number of suitable plants that to enumerate them all would occupy too much space. I will, therefore, restrict myself to naming such as *Plumbago capensis* and *Habrothamnus elegans*.

To insure success in the culture of climbing plants it is very essential that the habit and general character of each one be taken into consideration. The first thing to claim attention is to see that a thorough drainage be procured, as upon this item to a very large extent hangs the future success or failure of the undertaking. The best way of effecting this end is to place a number of clinkers or old brick rubble in the bottom of the hole, with a layer of long straw placed on them. My object for recommending straw in preference to turf, which is generally used, is that it is of a more durable nature. After the drainage is properly prepared the hole should be filled with fresh soil. The nature of this must of course depend on the requirement of the plant; but a compost of rich fibrous loam and peat, with a little charcoal and a fair proportion of sharp sand, will form a suitable mixture for most of the plants mentioned. Provided the foregoing instructions have been carried out evergreen climbers may be planted, making them tolerably firm, and giving a good watering to settle the soil well about the roots. In planting deciduous climbers I have found it best to somewhat limit the amount of root room, as by this means the plants may be kept at rest more or less during the winter. I have known many instances where this precaution has not been exercised, with the result that the plants

have continued to grow all the winter in consequence of receiving nourishment from the necessary damping of the floors.

Young plants should always be preferred to old ones, as they become established readily, and invariably grow more rapidly than those which have become root-bound. The plant ought to be given a good watering prior to its being turned out of the pot, after which a portion of the old soil should be removed, and the roots spread out evenly and thinly, covering them with compost to a depth of 6 or 8 inches. The syringe should at all times (with the exception of when the plants are in bloom) be used with a liberal hand, this operation being indispensable for the purpose of staying the ravages of the various insect pests.—G. PARRANT.

FORCING NARCISSUS TELAMONIUS PLENUS.

MESSRS. COLLINS BROS. & GABRIEL cannot find one word of a misleading nature in my communication on page 88. I have never said that this Narcissus can be had in bloom during October or November, but I maintain that the treatment given to Roman Hyacinths will suit the plants well, and further, that they can be brought into bloom with the most gentle treatment at Christmas. When I wrote that it "could be forced nearly as well and as early as the Roman Hyacinth," I think I sufficiently qualified that statement by saying, "What can be more useful and handsome than between 400 and 500 of these flowers from a box 2 feet by about 16 inches during the early days of January?" This is the time when Roman Hyacinths are plentiful and valuable. The impression left after reading Messrs. Collins Bros. & Gabriel's communication, on page 107, was that the Daffodil blooms could not be produced by that date. Now, by their own showing they had blooms earlier still. Their last paragraph wants me to produce them two months earlier, which is an utter impossibility, unless the bulbs were purposely prepared. I do not think this an impossible task, but it would be an unnecessary one. We do not want Daffodils when we have abundance of Chrysanthemums. It is impossible to say over how long a period we shall have Chrysanthemums before many years are over. We had our first large blooms in July, and I find we have two large blooms still on plants in a cool house (February 24th).

I could not think of accepting the challenge to send my box up to the R.H.S. even with the prospect of benefiting the Gardeners' Orphan Fund. I have nowhere said there were 450 flowers. I said between 400 and 500. The box might fall short by one, or it might have had more. My word on this point was disputed, and I think I made a very fair offer for anybody to come and count them. Mr. Collins (Messrs. Cutbush & Son's representative) saw the boxes I had retarding on the 15th or 16th January, and if this catches his eye he will perhaps give you his own impression about them.

I find the bulbs picked out of those I put in boxes and growing outside have very few single blooms to a bulb; the majority appear to have two and three. I have no doubt that 150 of these bulbs placed in a box would have yielded over 300 blooms. Let your readers secure good bulbs another year and pack them as thick together as they can in a box or boxes and note the result, and I venture to predict they will be highly pleased and not complain of the statement I made on page 88. One more word and I have done on this subject. When Messrs. Collins have a charge to level at me I shall be prepared to meet them without their levelling it at gardeners in a wholesale manner.—WM. BARDNEY.

A BENEFICIAL (?) FUNGUS ON GRAPES—SHANKING.

THE notice in the *Journal of Horticulture*, January 11th, 1894, page 30, of Mr. Arthur P. Hayne having found the fungus attacking the Grapes of the Rhine Valley to also infest the Grapes of California is very interesting. This, apart from the mould being "essential to the production of the best Rhine wines of Johannisberg," for it may occasionally be found on the bunch stems of Muscat of Alexandria Grapes, and not infrequently on shanked bunches of Alicante and Gros Colman in this country. Many growers would jump at a market for their shanked Grapes at £230 per ton = 2s. 0½d. per lb. Unfortunately the fungus is not altogether a blessing, even in Germany, for it "robs black or red Grapes of their colour and destroys the tannin," that is, it turns early attacked Grapes very sour—the Grape sugar being converted into vinegar. The vinegar organism (*Mycoderma aceti*), however, is seldom found in early-shanked Grapes, being mainly confined to those which have undergone the vinous fermentation, and it has an aversion for very rich saccharine solutions or those containing over 10 per cent. of alcohol. Shanked Grapes are, of course, no use for wine-making, therefore there is little prospect of a market for this class of goods. If the fungus attacks the Grapes late—that is, after the juices have been converted into Grape sugar, "it concentrates the sugar until it becomes impossible to make a dry wine." It is extremely difficult to tell exactly what condition the mould requires to be in to render the Grapes infested worth £230 per ton, for it clearly is good for nothing on black Grapes, turns them red and destroys the tannin, and worse than worthless on white Grapes by concentrating the sugar until it becomes impossible to make use of it.

The fungus, however, must have some influence on the wine made from Grapes infested with it, or it would not be recorded as a fact; therefore we have to consider in what form the mould is best fitted to effect the production of the best wines. This must be in the mould state and external of the Grapes, for if the mycelium of the fungus penetrates beneath the cuticle or skin of the stem of the bunch, foot-stalks of the berries, or Grapes, the parts infested speedily decay, leaving nothing but the woody tissue. The mould stage is not very common on Grapes, yet it may occasionally be met with on the bunch stem within the cluster of Muscat of Alexandria, this Grape having a singularly fibry or woody tissue, and the fungus cannot pierce the epidermis when it is hard and dry. Nevertheless, a spore of the fungus alighting on any substance where there is a fair amount of air moisture will speedily push its germinal tubes and spread over the surface, forming a dark mould over the part, with knob-like growths springing somewhat sparingly from the mycelium. A colony of such on the bunch stem of Alicante Grapes is shown in fig. 27. A is the brownish septate flocci



FIG. 27.

Mould on bunch-stem of Alicante Grape Vine—*Polyactis cinerea* as an external saprophyte.

(threads or mycelium) which is branched above, and to the naked eye has a black appearance, especially in the centre of the mass. The heads or terminal clusters of the hymenium (fructifying surface) are shown at B. It is this mould that is so valuable and I find uncommon, for though it may be freely produced on any surface where there is moisture, warmth, and a little nutrient matter, it is not often seen on Grapes as an epiphyte, and only on those with a hard impenetrable epidermis.

Polyactis (Botrytis) cinerea, C and D, however, is a common fungus in this country, and found on most decayed herba. It was formerly considered to be a mere saprophyte, a plant flourishing on dead or decaying vegetable remains, but experience has proved it to be a parasite, a plant deriving its food from living tissues. Of its latter proclivities we have abundant evidence in the Lily disease, also in its malignant effect on Artichokes, Beans, Clover, Roses, Snowdrops, and other bulbs, and on Vegetable Marrows, also on indoor plants, as Cucumbers, Melons, and Grapes. It is with regard to the latter that I desire to direct attention as respects this fungus.

I would observe in the first place that the assertion of shanking being unknown in vineyards must be erroneous, for *Polyactis cinerea* robs the black Grapes of the Rhine valley of their colour, rendering such unfit for wine-making. What is this redness but shanking? Then we have the testimony of Mr. Arthur P. Hayne that the self-same fungus attacks the Grapes of California. The point is this: the Rhine Valley is alluvial, and many Californian vineyards are of that formation, and where *Polyactis cinerea* is most found on Grapes in this country is low-lying or flat districts. Shanking in Grapes is very decisive where the Vines are planted in deep, close, damp borders, or in those made sodden and sour by the excessive additions or supplies of organic matter, the humus being disproportioned to the mineral constituents of the soil. The Vine is not a valley but a hillside tree. It prefers rock to mud, shattery, shinglely soil to stiff clay, and a gravelly, ferralcite earth to a rich, deep, damp, alluvial deposit. I

say prefers with strict regard to the conditions of health in the higher quality Grapes, that is the hillside-loving Frontignans and Muscats, in contradistinction from the coarse valley Grapes—Alicante, Gros Maroc, and Gros Colman. Why is precedence given to the latter before all late Grapes? Is it not because it is fitted to the environment—the rich soil and damp situation? In such places and soil it is no use attempting to grow the richly flavoured, thin-skinned Grapes, for they shank and are unprofitable. It is equally useless stewing them in close, moist, saturated atmospheres, for ulceration of the stem of the bunch may set in, and if we examine one such gouty place, say on the stem of a bunch of Muscat of Alexandria, we find outgrowths, and these, under a moderate power of the microscope, are visible as a very pretty plant with hyaline spores or seeds in terminal clusters (fig. 28, C). It is *Polyactis cinerea* rendering Grapes in the Rhine valley worth £230 per ton. Unfortunately there is a condition, and that entirely obliterated in this case, for the fungus is not a simple mould overspreading the surface of the Grapes, nor even a saprophyte, but a parasite with its mycelium traversing the living tissues, destroying the cells and abstracting their contents. This condition of the fungus is shown in fig. 2, D, a, dropped spores; b, mycelium; c, threads permeating the intercellular spaces; d, intact cells; e, destroyed tissue, nothing remaining but the woody fibres.

The inference will probably be drawn from the foregoing that the fungus is the cause of the disease, and so it is in so far as the destruction of the tissues is concerned, for a spore or spores has alighted on that particular spot on the stem of the bunch, which germinating has been able to push its germinal tubes (there are several emitted from each spore) through the cuticle, and so gained access to the underlying cells. These germ tubes emit a certain fluid which softens the epidermis, and this the thread will pierce if it can, gaining entrance by an opening perhaps not one-sixth of its own diameter. Once beneath the skin it soon attains enormous proportions, and weakens the tissues so as to have no difficulty in pushing its outgrowths into the air, reproducing itself by spores wherever it may get chance. This fungus also attacks the bunch stems of Gros Colman and Alicante, and the reason is they are soft or gross. Albeit the Vines may be long-jointed in wood and flabby in leaf, loose in bunch and sappy in footstalk and stem, yet they may not be attacked by this or any other fungus. It is a question of spores—seed. If there are none of those there cannot be any plants, and there is no chance whatever of realising £230 per ton for the Grapes, not because there is no beneficial mould for wine-making, but from the fact that such Grapes will shank. What? Without the fungus? Ah! there is a great deal of shanking without the presence of any fungus being discovered, for though I have examined many shanked Grapes, I have only found *Polyactis cinerea* occasionally. "This makes shanking more obscure than ever," some may say. I do not think so; it is the greed



FIG. 28.

Polyactis (Botrytis) cinerea as a parasite.

of the cultivator that lies at the root of shanking—the rich soil, the extra feeding, the stewpan system of growing Grapes. Top spit loam, mere paring of the richest pasture, in some cases crammed full of endless organic matter, which, becoming a soapy mass, is the foundation of shanking. Anyone can prove this by adding calcareous gravel to a sodden Vine border so as to form at least half of it, providing efficient drainage, and according good management. Every good natural Vine soil contains at least 75 per cent. of gravel or small stones.

Of Grapes examined for ascertaining the cause of shanking I have invariably found a micro-organism, sometimes associated with the fungal filaments in the diseased Grapes, but oftener without than with *Polyactis cinerea*, yet there have been some undetermined threads in a few instances where no mycelium of that fungus was detected. The micro-organism found in shanked Grapes has proved identical in all varieties examined, and was found in close conjugation with the stones or seeds, the fertilisation in many cases having been defective, as instanced by their abortive formation, and shown in fig. 29, E at f, the



FIG. 29.

Section of shanked Alicante Grape (berry)—*Bacillus ethaceto-succinicus*, Frankland.

shanking being represented at g. The section is that of a berry of Alicante, which was particularly large, and a mass of *Polyactis cinerea* both within the berries and on the footstalks and stems of the berries and bunch, some of the berries having rotted off as shown at h h.

On subjecting a little of the juice of the shanked Alicante berry to examination with a high power of the microscope, the forms shown in fig. 29, F, were revealed, which has a closer resemblance to *Bacillus ethaceto-succinicus* than to *B. ethaceticus*. The latter is stated by Prof. Percy Faraday Frankland, F.R.S., to act on mannite, but not on dulcete, while the former decomposes both mannite and dulcete. In close contact with the seeds, and resting upon them, I found the bodies figured at G, and considered them spores. On the occurrence of these bodies in the Grape I offer no opinion, suffice it to record the fact, and give others an opportunity of making whatever investigations they may deem proper. I may say, however, that I found these bodies in shanked berries of Gros Colman, and they were even larger as regards the bacilli, but the spores were smaller.

There was also *Polyactis cinerea* in the examples of shanked Gros Colman Grapes. In Muscat of Alexandria shanked Grapes I found the bacilli smaller, shorter, and thinner, but the spores were larger, and some of them square or rectangular in shape, and the berries contained only one seed in some cases, the others not being formed. The bacilli was more rod-shaped in Black Muscat (Muscat Hamburg) berries, and they seemed to break up into minute square or rectangular bodies, similar to the vinegar micro-organism. This square or rectangular form was even more decided in the shanked juice of Black Hamburg berries, and I found that these square forms ultimately contracted—that is, had the angles rounded off, and assumed the form of spore depicted. The Grapes were examined on October 20th, 1893, and sketches of all are kept for future guidance.

I should be glad to have the views of other readers on this perplexing question, and like to know if anyone has sown the seeds of shanked berries, and if so will kindly state the result.—G. ABBEY.

TRADE CATALOGUES RECEIVED.

P. Barr & Son, King Street, Covent Garden, W.C.—*Hardy Herbaceous Perennials*.

B. R. Davies, The Nurseries, Yeovil.—*Catalogue of Begonias*.

Dicksons, Limited, Chester.—*Farm Seeds*.

Chas. Toope & Son, Stepney Square, London, E.—*Heating Appliances*.

Vilmorin, Audrieux & Co., 4, Quai de la Mégisserie, Paris.—*Catalogue of Dahlias and Cannas*.



HARDY FRUIT GARDEN.

Pruning Filbert and Cob Nuts.—It is not desirable to prune these before the rosy pink, brush-like flowers are fully open, because the catkins bearing the pollen are mostly borne on the parts that need pruning away, and if the latter are removed before the fertilisation of the former has been effected a loss of crop will result. The catkins are usually the first to open, and if there is any probability of a scarcity of them a number should be cut off just as the pollen becomes ready, preserving them until the flowers are developed, over or among which they may be hung. The pollen then, if plentiful and dry, will soon be dispersed as it shakes off freely. The laterals may then be shortened, barren shoots as well as those which only bore catkins being pruned back to within half an inch of the leading branches. Thin out and shorten old growths so that fresh and fruitful side shoots may be produced for another year. The bushes are kept within a height of 6 feet in Kent, and the leading branches not too thickly placed; light and air can then penetrate among them. Remove suckers, planting some of the best for forming fresh bushes if necessary. Allow no suckers to extend from the roots of established plants. Keep the ground underneath clean and free from weeds.

Strawberries.—Old plantations, if worth retaining, ought not to be allowed to become a mass of growth, but a clear space of a foot to 18 inches left between the rows of plants, so that rich top-dressings may be supplied to assist the roots. Strawberry beds are often ruined through neglect in timely thinning out the runners and young plants, they frequently being left to late in the winter or early spring instead of attending to them in the autumn. Beds which were cleaned and top-dressed in the autumn may now have dead and decaying leaves removed as well as rough material raked off, strong weeds pulled up, the remaining manure, being lightly pointed in, not disturbing the ground too near the plants where there should be abundance of fibrous roots. In the centre of the spaces it may be moved deeper with advantage, and a little fresh manure worked in. If, however, roots have extended there, it will be better not to disturb the soil, but mulch the surface with manure.

Dressing the Beds.—There is no better time than the present to supply a dressing of soot to the plants and soil, a peck to a rod being sufficient. It will act beneficially in destroying small grubs and other insects which seek shelter beneath the foliage and among the crowns of Strawberry plants. The virtues of the soot will be washed down to the roots, promoting a vigorous start when growth shortly recommences. Beds that have had no top-dressing during the winter may receive now a mulching of partly fresh stable manure.

New Beds.—The soil about the plants may require firming, doing this only in dry weather. Run the hoe, too, in the spaces between the rows to loosen the surface soil, and cut down seedling weeds, the operation also promoting growth if frequently practised during the early part of the season. If planted in rich ground a mulching of manure will scarcely be needed by these at present, though early autumn-planted runners should be in a condition to fruit freely this season, and in this case a mulching of littery manure can be afforded when flowering commences.

Preparing Ground for Spring Planting.—The preparation of the ground must forthwith be accomplished if spring planting of Strawberries is contemplated. They always pay in the long run for the best treatment of the soil. Whether deep or shallow, rich or poor, deep cultivation ensures the best results. Trenching is the readiest means of deepening soils, but a complete reversal of the top and bottom spits is not always desirable, because poor, inert subsoil brought to the surface is not suitable for the vigorous growth of Strawberries. The better plan is to bastard trench, loosening the bottom spit thoroughly, but leaving it in its original position. The upper spit also should be well broken up and enriched liberally with decayed manure, or if the soil be poor an addition of old turf and loamy soil would considerably improve it along with manure.

Mulching Old Fruit Trees.—A considerable amount of assistance may be rendered to old trees by removing a portion of the impoverished surface soil down to the roots, and in its place spreading a layer of fresh loam intermixed with one part manure and about a fourth of charred refuse. The best results will follow from the use of such a dressing if it is applied chiefly towards the extremities of the roots and a little beyond. The spread of the branches indicates the radius within which the roots of each tree may be found. Manure alone may be applied, lightly pointing it into the soil, if loam cannot be procured. Fairly fresh manure contains a certain per-centage of ammonia, which is soon dissipated in the atmosphere if not mixed with soil or pointed in to the ground.

Applying Liquid Manure to Fruit Trees.—A soaking of stable or farmyard drainings or sewage might be applied at the present time with advantage to any large trees needing assistance. The soil and the roots are moist and better able to retain the food contained in the liquid than would be the case were the soil dry. The active rootlets will draw upon the food thus supplied during the whole season, and

they may be further assisted during the swelling of the crops. Wall trees in full bearing will be specially benefited by a soaking of liquid, so also will Currant bushes in the open. Liquid manure should not be given to young trees of any kind not yet in bearing, unless a more vigorous growth is required in any that have hitherto been growing weakly.

FRUIT FORCING.

Figs.—Earliest Trees in Pots.—To assist the trees in swelling the fruit apply a top-dressing of rich material to the surface of the pots, space being provided for this purpose by a layer of turves placed around the rims as advised in last week's calendar for Vines in pots. The dressings should not be heavy, but a little of the rich compost supplied at weekly intervals. Liquid manure will also be needed to sustain the health and vigour of the trees, it being better to supply a varied rather than a uniform regimen. Thus, watering with liquid from stable or cow house tanks, or guano, 1 oz. to a gallon of water, will act more potentially if a sprinkling of some approved advertised fertiliser be given about every ten days or fortnight. The following mixture will also be useful:—Three parts bone superphosphate, two parts sulphate of potash, and one part Thomas' phosphate, mixed and sprinkled on the soil. Let the water or liquid manure be of the same temperature as that in which the pots are placed. Dribblers are of no use, and insufficient supplies of liquid nourishment often cause the fruit to fall.

Maintain a genial atmosphere by syringing twice a day when the weather is bright, but avoid keeping the foliage constantly wet. In dull weather damp the walls, paths, and beds instead of syringing the trees, but an occasional syringing will be necessary to keep down red spider. If this pest appears paint the hot-water pipes thinly with sulphur, using skim milk for mixing. Commence ventilating a little at 70°, increasing it with advancing sun heat up to 85°, which ought not to be exceeded before noon, a rise of 5° to 10° after closing being beneficial. The night temperature may still range from 60° to 65°; 55° in the morning in severe weather is safer than the higher temperature, advancing 10° by day. Avoid crowding the trees, but instead of very close pinching it is desirable to tie shoots out or down as the growth advances, and confine the stopping to nipping off the points of the unruly growths at the fifth or sixth leaf, rubbing off those not required.

Planted-out Fig Trees.—Where these were started early in the year they will now require disbudding and stopping. Water the border freely when necessary at the temperature of the house or supply liquid manure, not too strong, and mulch with rich compost, which will attract the roots to the surface, where they can be fed by sprinklings of the mixture advised for trees in pots at the rate of 4 ozs. per square yard. Where the trees are confined to narrow and shallow borders encourage the emission of roots from the collar or stem by placing pieces of fibrous turf and partially decayed manure in contact with it, and by extending the material outwards a number of feeders will be secured. If these are supplied with water or liquid manure or top-dressings of chemical manures they will greatly assist the first and second crop of fruit. Keep the night temperature at 55° to 60°. When it reaches 65° by artificial means in the day admit a little air, increasing the ventilation with the temperature and reducing it in like manner, closing at 70°, syringing twice a day, and otherwise maintaining a genial atmosphere.

Peaches and Nectarines.—Earliest Forced House.—The fruit has nearly completed the first swelling and will soon enter on the stoning process. If the thinning has been properly attended to there will be about one fruit of the larger Peaches to every square foot of trellis covered by the trees. Nectarines and Peaches not of the first size may be left a little closer. There is danger, however, of the fruit falling if too many are left, but this depends greatly on the wood being well ripened and the otherwise healthy condition of the trees. If there be more fruit than specified above remove the smaller. During the stoning process keep the temperature as equable as possible, as a sudden check by draughts of cold air in the daytime and too high a temperature at night may prove disastrous. The night temperature may range from 60° to 65°, but 5° less will be safer in severe weather; 70° to 75° by day with sun heat and about 65° by artificial means when the atmosphere is cold and the sky overcast. Secure the shoots to the trellis as they advance, keeping those retained to attract the sap to the fruit stopped at the second or third joint. Keep red spider in check by syringing in the morning and afternoon of fine days. If thrips and brown aphides appear fumigate carefully when the foliage is quite dry. For destroying the insects named there are a number of advertised insecticides, all suitable for their respective applications. Afford due supplies of water to inside borders, or if the trees are at all weak liquid manure in a properly diluted and warmed condition.

Second Early Forced House.—Disbud gradually, removing the ill-placed and unnecessary shoots, not reserving too many of the best situated and most desirable, and tie down the growths early, so as to give them the required inclination, allowing sufficient room for their swelling in the ligatures. Thin the fruit by degrees, first removing those on the under side of the branches, or otherwise badly placed, but leave those in the best positions for receiving light and air until they indicate by free swelling the necessity for further reduction, then remove the smaller, and so on until only a few more than are required for the crop are left. Syringe the trees on fine mornings, and ventilate early in favourable weather. The temperature may range from 55° to 60° at night, 60° to 65° by day, ventilating at the latter temperature and closing the house when the heat is declining, allowing an advance

of 5° to 10° from sun heat. Supply water as required, but avoid making the soil very wet at this early stage, for it only induces soft growths.

Houses Started in February.—Trees started early in the month are now in flower. As in many cases there will be more flowers than needed, all those on the under side of the shoots may be removed by drawing the hand the reverse way of the growths, and where the blossoms are closely set they may be still further reduced, especially on the weaker shoots. A night temperature of 50° to 55°, and 55° by day artificially, is suitable, falling 5° on cold nights; ventilating from 50°, as a close atmosphere is fatal to the blossoms; freely at 55°, and allow an advance to 65° from sun heat. Fertilise the flowers in the early part of fine days, either by shaking the trellis or dusting the blossoms with a camel-hair brush charged with pollen. It is the better plan to pay attention to each individual flower when its pollen is ripe. Cease syringing when the trees are in flower, but the floor and border should be sprinkled morning and afternoon.

Houses to Afford Ripe Fruit in July and August.—These must now be closed, syringing occasionally until the buds show colour, when it should be discontinued. The borders must be brought into a thoroughly moist state by repeated waterings if necessary, supplying liquid manure to weak trees. If the lights have been off during the winter the borders will not require watering until the fruit is set and advanced in swelling. When the buds are sufficiently advanced and where there is a superabundance of promise for fruit, all those on the under or back of the shoots may be removed, which will strengthen those that remain and conduce to a good set of fruit. Maintain a temperature of 40° to 45° at night, 50° by day with a little air, advancing to 65° with sun and full ventilation.

Late Houses.—The weather lately experienced has usefully retarded the flowering, which in houses with fixed roofs is much too forward. If the lights are off there need be no hurry in replacing them; suffice that this be done by the time the buds show colour, and by thus retarding the trees they will be in flower by the middle of April, when they have the benefit of the sun heat. When the trees come into bloom there must not be any attempt at retarding the fructifying process, but a gentle warmth at that time does much towards securing a good set of fruit, and it is absolutely necessary in cold localities to insure safety from spring frosts. Houses with fixed roofs should be ventilated freely, and water supplied as necessary to keep the borders in a moist state down to the drainage.

Unheated Houses or Wall Cases.—The chief consideration in these is to retard the flowering. Anything required in the way of pruning and securing to the trellis should be completed, ventilating freely to retard the flowering to as late a period as possible. See that there is no deficiency of moisture in the borders, supplying water as required to bring them into a thoroughly moist condition.

Apricots in wall cases are in blossom. They cannot have too much air if only the temperature is kept at 45° to 50° by day, and prevented falling below 35° at night. A close atmosphere is fatal to Apricot blossom, also to those of Cherries and Plums. The cases containing these cannot be too freely ventilated, subject to the conditions given for Apricots. Pears are similarly exacting during their flowering period.

Strawberries in Pots.—The earliest plants are ripening their fruit, and when it changes colour a drier and more freely ventilated atmosphere is desirable, but there must not be any sudden change. The temperature for inducing the fruit to swell should be 65° at night and 70° to 75° by day, advancing to 85° or more from sun heat. Plants in vineries and Peach houses which are started periodically will afford successional supplies of fruit, there being no need to move the plants except to meet special requirements. Introduce plants to the shelves of late fruit houses, which suit the late forcing sorts.

flat and straight. If proper care be taken to apply the melted wax hot on both sides, the foundations will be secure. Large supers are prepared in the same fashion. Sections are prepared in various ways, according to their form. A large majority of experienced bee-keepers prefer the hot plate, asserting it is by far the best plan. I am still in possession of what I believe to be the first plate ever made, and which I used forty years ago. It will be ceded then I am neither a copyist nor follower of other people's ideas. In the *Cottage Gardener* from 1860 to 1863, will be found advice how to fix starters, and combs in split bars, by the aid of the hot plate, the substitute advised for the latter being a smoothing iron.

My apparatus is of a very simple construction. Its base for utility is a small box about 1 foot 3 inches long, 8 inches deep and 7 inches wide, but for obvious reasons it is turned on its side, the lid being in front. Two fillets, 1 inch broad by three-eighths thick, is screwed to the upper side, and on one end the plate brass ferrules, though which the screws pass, keeps the plate at the proper height, and prevents the firing of the wood; the tongue is



FIG. 1.

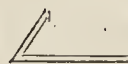


FIG. 2.

cut to suit the size of section (fig. 1). I prefer the lip turned as in fig. 2, it enables the sheet to be heated right on its edge without twisting the hand, and lays the melted wax where wanted. A bent wire on each side regulates the section. It is about 3 inches long and fully one-eighth thick, a hook at one end and U shaped, so that a screw passes between the arms and keeps it rigid. The round wire is better than flat iron having a slot hole.

An expert can fix foundation starters rapidly as described. I also employ a guide in front of the tongue, which may be of two or three pieces. The upper portion has three slots in it to regulate it to any width of the section, two near the front, and one at the back; the latter extending a little beyond the wood forms a groove on box which prevents oscillation. It is so regulated that there is just the thickness of the foundation between it and the tongue. A light wooden hook is attached to the left side to keep the section to it, the left hand without loss of time hooks and unhooks it by the natural movement, and at the same time presses lightly on the guide. The right hand places the guide against the bevelled hot tongue, and instantly drops it between the two, when by slackening the pressure a spiral spring on the side draws it back automatically.

When made in three pieces, the under piece the same thickness as the fillets has the end wood towards them, the middle piece one-eighth thick, is fastened to it, and the upper piece by the screws in the adjustable slots. The operator with a spirit lamp may have it on his knee or on a table in front of him. There must be a hole in the box above the lamp and under the plate. From 4000 to 5000 may be fixed by one man in ten hours, perhaps in a more satisfactory manner, too, than by any other plan. It is reassuring to see so many of our old plans adopted by modern bee-keepers as being the most serviceable, but it does not appear to be the fashion to acknowledge their origin. — A LANARKSHIRE BEE-KEEPER.

THE BEE-KEEPER.

APIARIAN NOTES.

SUMMER PREPARATIONS.

ON the 11th of February we had nearly a whole day's sunshine. I do not remember any year having so little sunshine. The stormy nature of the weather has spoiled the appearance of all hardy flowers, and in a great measure prevented bees adding additional charms to the garden; but we live in hope that the future will be auspicious for flowers, bees, and the fruits of the earth. We must not forget that "there is nothing to be gained without labour," and we ought to prepare for the best as well as for the worst, so that we may reap the best reward. As the days are now lengthening, bee-keepers should see that all is in readiness for the increase of stocks and for the honey flow.

FOUNDATION.

Fixing foundations in frames and supers ought not to be delayed too long, yet from the nature of wood absorbing damp, it is not advisable to fix until the atmosphere has assumed a drying influence or the sheets may lose hold. For frames there is no better plan of fixing than the groove; with it the sheet keeps perfectly



All correspondence should be directed either to "THE EDITOR" or to "THE PUBLISHER." Letters addressed to Dr. Hogg or members of the staff often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post, and we do not undertake to return rejected communications.

Letter Punches for Lead Labels (Inquirer).—We do not know of any special manufacturer of such punches, but you may obtain particulars from any ironmonger in a large way of business. The price is

about 3d. per letter, and the punch about 2s. 6d. Perhaps the correspondent referred to will oblige with particulars.

Poinsettias—Matter for Press (C. E.).—We are obliged by your communication, but when matter is written on both sides of the paper its publication is on that account delayed. Many communications when so written on large sheets of paper often have to wait for months, and several, we are sorry to say, are written in vain. Sheets of manuscript are cut into strips for distributing among a number of compositors, and this cannot be done when the writing is on both sides. See the instructions at the head of this column.

Azalea mollis (A. W.).—The Azalea mollis after flowering should be encouraged to make free yet steady growth in a light, but cool airy house. When the weather is warm and genial, and there is no fear of frost injuring the foliage, the plants should be plunged outside in an open sunny position. This Azalea succeeds best when planted out and lifted for forcing every alternate year. A very good book, by Mr. B. Wynne, on the Tuberous Begonia can be had from 1, Clement's Inn, Strand, London. The price is, we think, 1s. through booksellers, 2d. or 3d. more by post.

Madresfield Court and Black Hamburgh Vines (Welshpool).—Both these varieties may be grown successfully in an unheated house in the south by husbanding the sun heat during the summer, but not before the Vines start naturally, as they will in April, for when started too soon there is danger of injury from spring frosts. We prefer the Vines planted inside, but free access given by openings in the front wall for the roots to pass out. For a cool house or one for summer Grapes an outside border is best, planting the Vines in it, and taking care to protect the stems with haybands. The trellis for the Vines should be 16 to 18 inches from the glass.

Maidenhair Ferns (L. E.).—The grubs you write about are the larvæ of a weevil. They destroy Maidenhair Ferns and also Auriculas in the open ground. We know of nothing that will destroy them without injury to the plants. With the Adiantums you can eradicate them easily enough. We have done so several times. Shake away all the soil from the roots, allowing it to become a little dry before doing so, and frequently the maggots will fall out as well. If you have any doubt about any remaining thoroughly wash the roots and crowns in tepid water, then allow them to drain well before repotting. If you find grubs only in a few plants when you turn them out we advise you to burn them. If in the majority treat them as advised above.

Pruning Tea Roses (J. F. Ripon).—Tea-scented Roses may be pruned in the same way as Hybrid Perpetuals. First cut out entirely all the weak wiry looking wood, and shorten the stronger and more promising young branches to good dormant buds. The extent of the shortening depends on the length and strength of the wood. A rule easily to be remembered is this—the weaker the shoots the more they should be shortened, the stronger they are the longer they should be left. The weak may be cut back to 2 or 3 inches, the medium to 4 or 5 inches, the strong to 6 or 7 inches. If a great number of medium sized flowers for cutting are desired instead of a moderate number of fine blooms, then the long and strong growths, instead of being cut back may be arched over in the form of bows, and thus fixed in position, and then all the good buds on the stems may be expected to produce flowering growths. It must be understood that this long stem method of obtaining a profusion of Roses only applies to well established plants, and those recently planted (last autumn or this spring) should be closely cut back. From the middle to the end of March is usually a good time, for although growth may be extending from the upper part of the stems even before then the lower buds will be dormant, and if by too early pruning these back buds are forced into growth too early in turn they may be ruined by sharp spring frosts. We have seen Roses pruned in West Yorkshire in April with satisfactory results, but much depends on the season.

Vines for Lean-to House (May).—1, One or at most two Vines would be sufficient for a house 20 feet by 9 feet. If one, plant the Vine in the middle of the front, and train two canes from it, one to the right and the other to the left, along the front of the house about level with the eaves or trellis; and stop each 1 foot from the ends, pinching the laterals to one joint or leaf as made. In the autumn cut the laterals off, and shorten the canes to within 2 feet 6 inches of each end. When the buds break the following spring, train a cane up the roof 2 feet 6 inches from the ends, and towards the Vine leave two others 5 feet from the end canes, and 2 feet 6 inches on each side of the stem of the Vine. This will give you four canes 5 feet apart, which will afford better results than would a greater number of canes closer, stopping them 1 foot from the top of the house, and keeping the laterals pinched to one leaf as made. In the autumn, when the leaves fall, shorten each cane to 3 feet, and the following spring rub off all but five growths, training one as a continuation of each rod, and the others laterally, two on each side of the rod 18 inches apart. Thus, in the third year, you will have a well-established Vine and some Grapes, with a full crop in the fifth year. Another plan is to plant Vines 5 feet apart along the front, the end ones 2½ feet therefrom; train a cane from each, which will reach the top of the house the first season, and being treated as advised for the other method—that is, the laterals pinched at every leaf, the cane stopped 1 foot from the top of the house, shortening them in winter to 3 feet from the bottom of the rafter—you may secure fruit in the second year, and a full crop in the fourth. The Vines may

be planted 4 feet apart, which would require five Vines, but better results are had at the greater distance, especially if you wish to grow plants beneath the Vines. The extra strong canes would be better fruited in pots or tubs than planted out in the border, as they would be more under control.

Gooseberry Caterpillars (W. S.).—You do well to adopt the idea that prevention is better than cure. Your plan will be to remove the surface soil well down to the roots to a distance of 18 inches or 2 feet from the stems, and bury this with the cocoons it contains elsewhere deeply. Then if you dredge soot under the bushes and cover with a mixture of loam or good garden soil and decayed manure you will get rid of the enemy, and put new life into the bushes by means of the new soil placed on the roots. Mulching heavily with fresh tanner's bark prevents the ascent of the egg-depositing moths, and to a certain extent otherwise benefits the bushes.

Fig Tree Casting its Fruits (T. L.).—The fruits are very small, and have been shed in the early stages of swelling. On close examination internally the floral organs are found to be very defective, indeed the embryonic constructions are such that there could only be one result—abortion. The Fig is one of those trees which casts imperfectly formed embryos when the fruits are the size of a pea to a horse bean, also those fruits which do not satisfactorily pass the flowering process. This is the more remarkable since the Fig seldom perfects seeds in this country. The cause of your fruits dropping is probably that the Fig tree grown in a vinery was more or less shaded, so that the points of the shoots from which the first-crop Figs are chiefly produced were not sufficiently ripened. The only thing we can suggest is to keep the growths thin, and expose the points of the shoots in the late summer—in fact, throughout their growth—to all the light possible, so as to thoroughly ripen the wood.

Sowing Lawn Seeds (J. G.).—By the words "levelling down the terrace" we presume you do not intend sowing on a slope. The ground must be clean, fertile, and made quite firm. For insuring a quick growth of lawn grass it is quite worth while to surface the plots half an inch thick with sifted soil, largely consisting of decayed vegetable matter and wood ashes, the residue of burnt vegetable refuse, also sifting a little over the seeds after sowing. Finely crushed nitrate of soda, applied after sowing at the rate of a little over an ounce per square yard, expedites growth. By sowing, if the ground and weather be suitable, towards the end of March, the lawn ought to be "quite green" before the end of May. By sowing during the first days of April we have had a lawn close and green enough for "croquet," when it was in fashion, within eight weeks; but the weather was not unfavourable. We have known injury done by frost when sowing has been completed before the middle of March. Sparrows and finches often devour much of the seed if they have their will. Most, but not all persons like a little white Clover in lawns, as it renders them greener in dry weather. The seed is usually sold and sown separately. If you state the extent of the ground to one of the seed firms who advertise in our columns, and ask for the requisite quantities of Grass and Clover seeds, they will be sent in right proportions for forming a good lawn.

Early Chinese Primulas (Anxious).—If you want fine plants at their best in November you cannot do better than sow the seed early in March in heat, as proposed. If kept steadily growing they might be had large enough to well fill 7-inch pots, and to flower strongly by the time mentioned. During the hottest part of the year keep the plants in a cold frame or pit. Shade from very bright sunshine, and when the nights are fine draw off the lights, so that dews may freshen the leaves. Do not pinch out the first or central truss, as it is only by retaining this that a good pyramid of flowers can be had.

Camellias Unhealthy (Ditto).—Doubtless it was thrips that ruined the leaves of the Camellias you desire to restore to good health, and we suppose you have already extirpated this pest. Retubbing Camellias is a rather big undertaking. Luckily it is not often needed, large trees thriving admirably undisturbed at the roots for many years. All they need is an occasional top-dressing of fresh fibrous loam, with a little fine dry cow manure added, and occasional supplies of mild liquid manure. In all probability the trees you have taken charge of are not well rooted. If on examination the soil is found in either an exhausted state or much soured, you will do well to either reduce the balls, lift out, redrain and retub the trees, or to pick away much of the old soil from round the sides and from the surface, damaging none of the roots, and replacing with fresh compost. The latter should consist of two parts of fibrous loam, devoid of lime and roughly broken up, to one good leaf soil and partially decayed horse droppings, with sharp sand and charcoal added freely. You might also add a sprinkling of bonemeal with advantage. Pack the compost rather firmly about the roots, and avoid saturating the new soil. Gentle heat and humid atmosphere, accompanied by occasional syringings, would be likely to promote a stronger, healthy growth than formerly; but the process of recovery will be somewhat slow in any case.

Conservatory Climbers (T. P. H. B.).—Conservatories are usually kept moderately warm, enough fire heat being given during the colder months of the year to keep the night temperature at from 45° to 50°, an increase of from 5° to 10°, according to the external conditions, taking place during the daytime. This intermediate temperature would suit climbers generally met with in such structures well, and certainly the six sweet-scented kinds to be named. For back walls

and pillars you can have nothing sweeter than Heliotropes, the preference being given to such moderately strong growers as White Lady and Paul Pfitzer. *Luculia gratissima* also does best against a wall where it would produce fine trusses of very sweetly scented flowers at midwinter. *Mandevilla suaveolens* rambles freely and gives a long succession of large white sweet-scented flowers. *Jasminum grandiflorum* grows even more strongly, and a profusion of trusses of rather small flowers quite scent a large house. *Schubertia grandiflora*, under good management, succeeds well in a conservatory, producing large trusses of Stephanotis-like flowers very freely. *Rhynchospermum jasminoides*, however, is more likely to succeed in the majority of conservatories, this species yielding a great profusion of white, sweetly scented, *Jasminum*-like flowers in the summer. There are a few Roses admirably adapted for conservatory culture. Foremost among these must be placed the *Maréchal Niel*, a good companion being found in *Lamarque*, *Safrano* also deserving of a place, as it is perpetual flowering.

Names of Fruits.—*Notice.*—We have pleasure in naming good typical fruits (when the names are discoverable) for the convenience of regular subscribers, who are the growers of such fruit, and not collectors of specimens from non-subscribers. This latter procedure is wholly irregular, and we trust that none of our readers will allow themselves to be made the mediums in infringing our rules. Special attention is directed to the following decision, the object of which is to discourage the growth of inferior and promote the culture of superior varieties. *In consequence of the large number of worthless Apples and Pears sent to this office to be named, it has been decided to name only specimens and varieties of approved merit, and to reject the inferior, which are not worth sending or growing.* The names and addresses of senders of fruit to be named must in all cases be enclosed with the specimens, whether letters referring to the fruit are sent by post or not. The names are not necessarily required for publication, initials sufficing for that. Only six specimens can be named at once, and any beyond that number cannot be preserved. *They should be sent on the first indication of change towards ripening. Dessert Pears cannot be named in a hard green state.* (*G. C.*)—*Pear Ollivier des Serres*; Apple unrecognisable, probably local.

Names of Plants.—We only undertake to name species of plants, not varieties that have originated from seed and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in firm boxes. Slightly damp moss, soft green grass or leaves form the best packing, dry wool the worst. Not more than six specimens can be named at once, and the numbers should be visible without untying the ligatures, it being often difficult to separate them when the paper is damp. (*Reader*).—1, A specimen of *Carageen*, a name given in Ireland to *Crondrus crispus* and some other allied *Algæ* when dried and bleached. Large quantities are collected for sale and used for cattle feeding, and making jelly for invalids. It is more nutritious than gelatine. 2, *Lycopodium alpinum*, the Alpine Club Moss, and can only be grown in habitats appropriate to its needs. (*T. K.*)—The *Cattleya Trianæ* is a fairly good form, and is probably worth 2 guineas. (*J. T.*)—1, *Lachenalia pendula aureliana*; 2, *L. aurea*; 3, *L. luteola*; 4, *Asplenium flaccidum*. (*Fern Lover*).—1, *Asplenium bulbiferum*; 2, *Pteris umbrosa*; 3, *Adiantum pubescens*. (*R. C.*)—*Cypripedium Harrisonianum*; 2, good form of *C. villosum*. (*G. C.*)—*Veltheimia viridifolia*.

GARDENERS' CHARITABLE AND PROVIDENT INSTITUTIONS.

THE GARDENERS' ROYAL BENEVOLENT INSTITUTION.—*Secretary*, Mr. G. J. Ingram, 50, Parliament Street, London, W.C.

UNITED HORTICULTURAL BENEFIT AND PROVIDENT SOCIETY.—*Secretary*, Mr. W. Collins, 9, Martindale Road, Balham, London, S.W.

ROYAL GARDENERS' ORPHAN FUND.—*Secretary*, Mr. A. F. Barron, Royal Horticultural Society's Gardens, Chiswick, London, W.

COVENT GARDEN MARKET.—FEBRUARY 28TH.

MARKET still very quiet.

FRUIT.

	s.	d.	s.	d.		s.	d.	s.	d.	
Apples, per bushel	2	6	to	9	0	Lemons, case	10	0	to 15	0
„ Nova Scotia, per						Peaches, per doz.	0	0	0	0
barrel	12	0	24	0		Plums, per half sieve	0	0	0	0
Cobs	40	0	42	6		St. Michael Pines, each	2	0	6	0
Grapes per lb.	1	0	2	6		Strawberries per lb.	10	0	16	0

VEGETABLES.

	s.	d.	s.	d.		s.	d.	s.	d.		
Asparagus, per bundle ..	7	0	to	8	0	Mustard and Cress, punnet	0	2	to	0	0
Beans, Kidney, per lb. ..	0	6	1	0	Onions, bushel	3	6	4	0		
Beet, Red, dozen	1	0	0	0	Parsley, dozen bunches ..	2	0	3	0		
Carrots, bunch	0	3	0	4	Parsnips, dozen	1	0	0	0		
Cauliflowers, dozen	2	0	4	0	Potatoes, per cwt.	2	0	4	0		
Celery, bundle	1	0	1	3	Salsafy, bundle	1	0	1	5		
Coleworts, dozen bunches	2	0	4	0	Scorzoneria, bundle	1	6	0			
Cucumbers, dozen	2	0	7	0	Seakale, per basket	1	3	1	6		
Endive, dozen	1	3	1	6	Shallots, per lb.	0	3	0	0		
Herbs, bunch	0	3	0	0	Spinach, bushel	1	6	3	0		
Leeks, bunch	0	2	0	0	Tomatoes, per lb.	0	6	0	9		
Lettuce, dozen	0	9	1	0	Turnips, bunch	0	3	0	0		
Mushrooms, punnet	0	9	1	0							

AVERAGE WHOLESALE PRICES.—OUT FLOWERS.

Orchid Blooms in variety.

	s.	d.		s.	d.		s.	d.	s.	d.	
Arum Lilies, 12 blooms ..	1	6	to	3	0	Pelargoniums, 12 bunches	6	0	to	12	0
Azalea, dozen sprays..	0	6		1	0	Pelargoniums, scarlet, doz.					
Bouvardias, bunch ..	0	6		1	0	bunches	4	0	6	0	
Camellias, dozen blooms ..	0	9		2	0	Poinsettia, doz. blooms ..	3	0	4	0	
Carnations, 12 blooms ..	2	0		4	0	Primula (double), dozen					
Chrysanthemums, dozen						sprays	0	6	1	0	
bunches	4	0		12	0	Primroses, doz. bunches ..	1	0	2	0	
Eucharis, dozen	2	0		4	0	Pyrethrum, dozen bunches	2	0	4	0	
Gardenias, per dozen ..	6	0		12	0	Roses (indoor), dozen ..	1	0	2	0	
Hyacinths, dozen spikes ..	2	0		4	0	„ Tea, white, dozen ..	1	0	3	0	
Hyacinth, Roman, dozen						„ Yellow, dozen	2	0	4	0	
sprays	0	6		0	9	Roses (French), per dozen	3	0	6	0	
Lilac (French) per bunch	2	6		4	0	Roses, Safrano (English),					
Lilies of the Valley, dozen						per dozen	2	0	3	0	
sprays	0	6		1	0	Roses, Maréchal Neil, per					
Lilium longiflorum, per doz.	3	0		9	0	dozen	3	0	6	0	
Maidenhair Fern, dozen						Snowdrops, doz. bunches..	1	6	3	0	
bunches	4	0		6	0	Tuberose, 12 blooms..	0	6	1	0	
Marguerites, 12 bunches ..	2	0		4	0	Tulips, dozen blooms ..	0	6	1	6	
Mignonette, 12 bunches ..	3	0		6	0	Violets, Parme (French),					
Narciss, Yellow (French),						per bunch.. .. .	2	0	3	6	
dozen bunches.. .. .	1	6		2	6	Violets, Ozar (French), per					
Narciss, White (French),						bunch	2	0	2	6	
dozen bunches.. .. .	3	0		5	0	Violets (English), dozen					
Orchids, per dozen blooms	3	0		12	0	bunches	1	0	2	0	

PLANTS IN POTS.

	s.	d.	s.	d.		s.	d.	s.	d.				
Arbor Vitæ (golden) dozen	6	0	to	12	0	Ferns (small) per hundred	4	0	to 8	0			
Arum Lilies, per dozen	..	6	0	12	0	Ficus elastica, each	..	1	0	7	6		
Aspidistra, per dozen	..	18	0	36	0	Foliage plants, var., each	..	2	0	10	0		
Aspidistra, specimen plant	..	5	0	10	6	Genista, per dozen	..	..	9	0	15	0	
Azaleas, per dozen	..	24	0	42	0	Hyacinths, per dozen	..	..	5	0	9	0	
Cineraria, per dozen	6	0	12	0	Lilium Harrissi, per dozen	..	15	0	18	0	
Cyclamen, per dozen	9	0	18	0	Lycopodiums, per dozen	..	..	3	0	4	0
Dracaena terminalis, per dozen..	18	0	42	0	Marguerite Daisy, dozen	..	..	6	0	12	0
Dracaena viridis, dozen	9	0	24	0	Mignonette, per doz...	..	..	6	0	9	0
Ericas, per dozen	9	0	24	0	Myrtles, dozen	..	..	6	0	9	0
Euonymus, var., dozen	6	0	18	0	Palms, in var., each	..	..	1	0	15	0
Evergreens, in var., dozen	6	0	24	0	„ (specimens)	..	..	21	0	63	0
Ferns, in variety, dozen	4	0	18	0	Solanums, per dozen	..	..	9	0	12	0
							Tulips, per dozen	..	..	6	0	9	0



POTASH.

THAT potash is often used wastefully in mixtures of chemical manures is certain, but knowing the important part it plays in the economy of plant growth, we would rather run the risk of using it wastefully than have crops suffer for the want of it. In our prescriptions for such manures, care is taken to render the combination complete in each essential element of plant food—the nitrogen, potash, and phosphoric acid, so that each crop for which it is used shall be a full one. The term “full” is a comprehensive one embracing every part of a crop. It is quite possible to have corn crops with great bulk of straw and a low yield of grain, the cause being a deficiency of potash in the soil; so too we may have plenty of leafage on root crops with a light crop of roots for want of potash. The roots of White Turnips, Swedes, Mangolds, Carrots, contains 20 per cent. more potash than the leaf, the tubers of Potatoes 17 per cent. more potash than the haulm.

Of guides to the use of potash we know that light sandy soils, thin mediums on chalk, and mould in the Fens are deficient in potash. We know too that a want of colour in crops growing in well drained soil, that pale sickly hue which is so tantalizing, is probably owing to a want of potash. Here the test is easily applied where the drainage is sound and efficient, by a dressing of muriate of potash to a strip as wide as can be well covered broadcast right across the field in showery weather. In permanent pasture a thin, weak growth of Clover is a sure indication of insufficient potash in the soil; the application of potash then has an almost miraculous effect, bringing the Clover into such prominence as to add greatly to the quality and the bulk of the crop.

Even when it is certain that clay soils have potash in abundance, it only becomes available for each crop under timely

and thorough tillage. Knowing that what may be termed the natural potash of such soils is there in the form of an insoluble silicate of potash combined with other silicates, and that it is only by the action of atmospheric agencies that it is very slowly rendered soluble and available for plant food, we take care to give them thorough autumn tillage, to see that nothing is wanting in drainage, mechanical division, deep tillage, ridging, and thorough exposure in the winter, so that there is an ample store of free potash prepared for the spring sown crop by natural agencies. Here is one more potent reason for autumn tillage: break up the soil quickly after harvest, clean it, leave it with a rough open surface, so that frost, snow, wind, rain, air, and sunshine may all exercise a beneficent influence upon it. See what is lost by the sluggish farmer who, always behindhand with his work, leaves his heavy land unploughed all the winter! The sodden inert soil is only ploughed to sow, without a thought, or rather in entire ignorance of what has been lost for want of autumn tillage. It is not for such men that we write, but for the earnest, intelligent workers, ever striving for improvement, and who realise the profit to themselves of combining practice with science.

Even under the best system of tillage it is quite possible to have a deficiency of potash, because of the considerable quantity of it that is absorbed by crops generally, and the extraordinary amount required by others. It is so important that this should be clearly understood that we quote the following table from Warrington's "Chemistry of the Farm":—

17 tons of	Turnips with their tops abstract	149 lbs. of potash per acre.
14 "	Swedes "	80 "
22 "	Mangolds "	301 "
6 "	Potatoes "	80 "
1½ "	Meadow hay "	51 "
2 "	Red Clover hay "	83 "
30 bushels	Beans with straw "	67 "
30 "	Wheat "	29 "
40 "	Barley "	36 "
45 "	Oats "	46 "

These figures may be taken to represent the ordinary yield per acre of each crop; when extraordinary crops are taken it is obvious that there is a proportionate absorption of potash. In either case it appears advisable to include a moderate quantity of potash in our manure mixtures to make due provision for the next crop of a mineral that forms quite one-third of plant ash. Of this manure, as well as the other essentials, we would therefore strongly urge the importance of a sufficient annual dressing, so that nothing may be wanting in Nature's storehouse—the soil—for the sustenance of the crops growing in it.

WORK ON THE HOME FARM.

Taking the end of February as the best time for applying the annual dressing of chemical manure to permanent pasture generally, due care must be taken not to use it where there is any risk of floods on low lying meadows from the overflow of rivers or brooks running through them. There is much flood water out in the Midlands just now, and it would be obviously unwise to venture upon the use of manurial salts on such land without due precaution. Fortunately it is so naturally fertile that little, if any, manure is required. No time must be lost in using the manure on hill farms, and on all sound pasture safe from flood. Let it be clearly understood that some manure must be used annually at this season of the year if we would have an early and free growth of herbage. The necessary outlay of £1 or so per acre every year may strike the beginner as a serious addition to the rent, but let him not hesitate to do it, and if only he obtains genuine manures, and uses them early, in good time for them to be dissolved and washed into the soil wherein are the roots, he will find it one of the best investments he ever made.

The one difficulty is to obtain pure manures at reasonable rates. Frequently are we asked about the prices charged for them in different localities. We may say here that not only ought prices not to have an upward tendency, or really to fluctuate much, but nitrogen ought to become cheaper. It is matter for congratulation that our home supply of it as sulphate of ammonia is increasing annually with great rapidity. From 40 000 tons in 1870 it has now grown to an annual output of nearly 200,000 tons, the sources being gas works, shale oil works, iron works, coke ovens, and carbonising works. This is considerably in excess of the quantity of nitrate of soda imported, and its tendency ought to be to cheapen both forms of nitrogen for the soil, and when

ordering chemical manures obtain enough nitrate of soda or sulphate of ammonia to have some at hand for a top-dressing to any growing crop which it may be desirable to help during the spring or summer.

OUR LETTER BOX.

Manure for Pasture (T. C. C.).—A dressing of manure must be applied every year to have sustained fertility of soil, free growth of herbage the year round (according to season), and a crop of increasing bulk. There is undoubtedly in the autumn a residue of fertility in the soil from this source, but it is insufficient to ensure either a full hay crop or an abundant aftermath. Give a full dressing now, and if next February the fresh green appearance of the pasture tells you plainly, as it will do, of some plant food remaining in the soil, then reduce the quantity of manure by one-fourth or one-third, as may seem safe. We have invariably found liberality about pasture manure remunerative, if only it is applied sufficiently early in the season for the salts to be dissolved and washed into the soil about the roots. We give the end of February as the best general time, but we should always be guided by local rainfall. Now as to your prices. The quotations for nitrate of soda and bonemeal are fair, for mineral superphosphate high, and for muriate of potash exorbitant. There is no fluctuation in the supply of this salt; a fair cash price for it on 80 per cent. purity is from £8 to £9 per ton—say £9 as a little beyond the mark, add something for sale by hundredweight, and you will then see that 15s. 6d. is preposterous.

KEEPING HAMS AND BACON.—If your correspondent ("W. H. B.," page 158) cannot get his hams and bacon smoked, even at some distance from his home (which I should recommend), then let him, having thoroughly dried his hams and bacon, sew them up in coarse linen bags and then give the bags a coat of whitewash, and I do not think he will find either weevils or flies troubling them; if smoked the same plan should be adopted.—C. D.

LOW PRICE OF CORN.—Last week the average price of English Wheat broke the record, for it fell to 24s. 5d. per quarter. No average so low as this has been registered since the passing of Sir Robert Peel's Corn Bill in 1846, nor if we trace prices back for a century can we find a parallel to it. The quantity of Wheat returned as sold at the statutory markets last week was only 44,769 qrs., as compared with an average of 67,500 qrs. in the corresponding week of the four preceding years, so that a falling price has coincided with a diminishing supply. Moreover, as the figure of 24s. 5d. is an average, it follows that last week some quantity of English Wheat must have changed hands at less than this price. In the previous week at Ely, Cambridgeshire, the average was only 22s. 11d., and it cannot be doubted that at several provincial markets last week the price of native Wheat was less than 3s. a bushel. Though some of last season's crop was of superb quality, as denoted by high weight per bushel, there was also harvested a considerable quantity of inferior corn, the marketing of which has probably had some effect in bringing about the depreciation in average prices which has been continually in progress since last year's closing average of 26s. 6d. The lowest weekly average price which had been recorded previous to that now under notice was 24s. 8d. for the week ended March 25th, 1893; the current average is 3d. per quarter below this. It is difficult to find any substantial argument against the likelihood of a further decline in the value of our bread cereal, but the return from the United States Department of Agriculture, due to be issued at Washington on the 10th prox., is awaited with much interest, as there are grounds for supposing that the reserves of American Wheat which will then be announced will prove to be unusually low, and perhaps unprecedentedly so.

METEOROLOGICAL OBSERVATIONS.

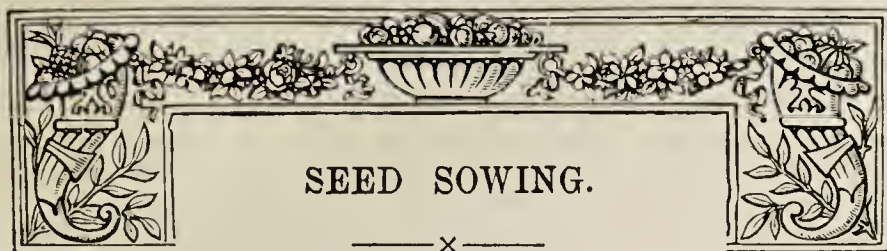
CAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude, 111 feet.

DATE.		9 A.M.					IN THE DAY.				Rain.
1894. February.		Barometer at 32°, and Sea Level.	Hygrometer.		Direc- tion of Wind.	Temp. of soil at 1 foot.	Shade Tem- perature.		Radiation Temperature		
			Dry.	Wet.			Max.	Min.	In Sun.	On Grass.	
		Inchs.	deg.	deg.		deg.	deg.	deg.	deg.	Inchs.	
Sunday	.. 18	30.35+	35.1	31.8	N.E.	40.7	37.9	35.4	69.8	30.0	—
Monday	.. 19	30.562	30.2	30.0	E.	39.2	37.8	23.3	68.1	18.0	—
Tuesday	.. 20	30.491	28.7	28.2	N.E.	38.1	39.6	24.1	69.9	19.4	—
Wednesday	.. 21	30.349	29.6	28.3	N.E.	37.2	39.1	24.8	66.8	19.0	—
Thursday	.. 22	30.361	30.3	29.7	N.E.	36.9	39.8	23.9	62.7	18.2	—
Friday	.. 23	30.049	31.4	30.2	S.W.	36.2	44.7	26.9	55.9	23.4	0.253
Saturday	.. 24	29.679	38.9	38.4	W.	36.0	49.1	31.2	86.0	29.1	—
		30.264	32.0	31.9		37.8	41.1	26.8	63.5	22.4	0.253

REMARKS.

18th.—Unbroken sunshine throughout.
 19th.—Sharp frost early; bright sunshine from sunrise to sunset, and brilliant night.
 20th.—Unbroken sunshine throughout the day; bright night.
 21st.—Bright sun all day, and cloudless night.
 22nd.—Overcast early; bright sun from 9 A.M. to 1 P.M., cloudy at times after.
 23rd.—Sun shining through haze, and thin cloud all morning and occasionally in afternoon.
 24th.—Overcast early, bright sun from 10 A.M.; bright night.
 A cold week, but not nearly so severe as the first week in January.—G. J. SYMONS.



SEED SOWING.

ON the preparation of the ground for seed sowing depends the even and certain appearance of the plants, their free growth afterwards, and the ultimate value of crops. A good tilth is indispensable to a favourable seed bed, whether the crop to be grown is one of weeds or useful produce, for the laws of Nature are the same in both cases. A rough, fallow field will not produce a luxuriant crop of Charlock, but corn fields are often golden with it, and root crops would be choked by it but for the horse and hand hoe. The difference is because the fallow is rough and cloddy, but the corn land has been mellowed by the frosts of the winter, the aëration effected by ploughing, and the reduction to fine particles by harrowing. It is also necessary that the land be in good heart, yet it is no use having all the elements of fertility locked in it. Tilth is essential to the conservation of the moisture which the seed requires, and the ultimate growth of the plants by the facilities afforded for the free action of roots. Tilth also means the diffusion of the manurial elements through the soil for forming a nutrient solution for the absorption by the all-important root hairs of plants. Stuffing land with "muck," which may be rank and sour, may, and generally does, disappoint the grower, for it is not sufficient that the earth contain chemically all the elements of fertility, but the value of these depends on the physical conditions of the soil.

Assuming that stiff soil has been dug in the winter it is a good plan to choose a dry day, when the land is in proper condition for forking, to break it up and smash all lumps as small as possible. This will admit air into the soil, the importance of which cannot be over-valued. If the medium is very stubborn a dressing of quicklime, fresh slaked, floury, and hot, will be of immense advantage chemically and physically. It will act, as Mr. F. Dunn says, on the authority of Mr. John Hughes, F.C.S., on page 153 of the present volume of the *Journal of Horticulture*, by "decomposing the insoluble silicates of potash and rendering them available as plant food—unlocking the hidden treasures of the soil," and it will also improve the staple; more, it will make speedy work of slugs and destructive grubs which are awaiting a crop being sown or set to prey upon the tender roots or stems. After the land has been dried in the manner described it will have fallen into a powdery surface. It should neither clog the implement nor stick to the feet. A fine tilth of a couple of inches in depth or more will drill easily and the soil be in the right condition for covering the seeds.

Light soils merely require turning a short time before sowing to be in suitable condition for the reception of seeds. Medium textured land crumbles readily after rain. All soils alike need a good tilth for seed sowing. The surface mould acts as a mulch, protects the stores of moisture and of nutrition beneath, this being not only conserved but increased by occasional slight stirrings of the surface with the hoe. This breaks the capillary tubes, and the water and nutrition drawn from below by the sun instead of passing too rapidly into the air is retained in the earth for the support of plants and crops.

Some soils receive all the manure that is deemed necessary or obtainable at the time of digging in the autumn, so that the medium may be in the right condition for the crop by the spring. For land

requiring full enrichment the practice may be correct, but I have taken a great dislike to raw manure, as its decomposition in the soil is a slow process, and liable to foster insects and fungi, which delight in decomposing organic remains. If the land has not been enriched, decayed, yet not exhausted, manure may be applied, and pointed in from 4 to 6 inches deep in the spring. Light land would derive benefit from a dressing of kainit, especially for root crops, using 2 lbs. per rod, and if further need of a stimulant is required a peck of soot may be applied with advantage. Lime is not desirable for light land unless it contains a quantity of manure, or is deficient in lime, in which case gypsum would act beneficially. These substances not only possess manurial value, but tell greatly in favour of the crops by acting to the prejudice of insect larvæ. This is important for many seeds only germinate to have their radicles and plumules eaten as soon as they emerge from their envelopes, and I find nothing favours the vermin more than a rough seed bed.

The bed for the seeds should not only be fine, but it must be moist, for unless the seed absorbs moisture no motion of the contents of the germ cells takes place. When germination begins, and the half-sprouted seed is allowed to dry, growth ceases. Seeds of most garden plants vegetate the most healthfully when the ground is moist, but not wet, excess of water often causing seeds to decay. Choose, therefore, a time for general seed-sowing when the ground is neither wet nor dry, and if covered at once with fine soil germination will quickly ensue.

Seeds sprout within certain more or less narrow limits of warmth. Some will grow in a temperature of 40°, such as Parsnips and Onions, while Peas require a temperature of 44°, Scarlet Runners 50°, and Vegetable Marrows 54°. These are minimums, for Sachs found that Peas germinated the most rapidly at a temperature of 84°, Scarlet Runners 79°, and Vegetable Marrows 93°. This is a hint worth acting on—a seed committed to the earth below the minimum temperature needed for vegetation may preserve its vitality, but in excessive moisture it is more likely to decay. Even with a minimum temperature the production of rootlets, buds, and leaves is retarded. It is best, therefore, to wait until the weather is favourable for the speedy germination of the seeds, as the seedlings will then have a chance of growing freely. The end of March or the beginning of April is soon enough to sow Onions in the north of England, Carrots a fortnight later, while early in May is soon enough for Beet. Of course, there is a great variety of garden crops and times of seed sowing, but it is better to be on the side of being rather late than much too early in placing seeds in the ground.

Oxygen from the air is essential to the germination of seeds. Practically that means they must not be buried too deeply, for unless oxygen can reach them freely there will be no excitement of the embryo. Hence seeds retain their vitality for years when buried deeply in the earth because they are shut off from oxygen. Some persons may say darkness is essential for germination. Nature does not cover seeds, but scatters them on the earth. They may be half buried in debris, but are by no means removed from the light. Small seeds such as Begonia, Calceolaria, Heaths, Fern (spores), Rampion and others germinate best when uncovered, provided the right conditions of moisture are secured. Common garden seeds will sprout when placed on moist sand, moss, sawdust, or cocoa-nut fibre refuse with as much certainty as when buried.

The soil is the medium of moisture and warmth to the seed, and it affects germination only as it influences the supply of these agencies. The burying of seeds is a cultural process—not an essential of germination—and prevents their being dried up, also protects them from birds. Yet this is not enough in many cases to preserve the seeds, for rats and mice will bring Peas and Broad Beans from beneath 2 or 3 inches of earth, and birds pluck up seedlings of various kinds. It is the duty of the cultivator to hinder them. I find Peas and Broad Beans coated with petroleum,

and small seeds moistened and coated with red lead, defy the rodents and the birds. Of the efficacy of this practice I have abundant confirmation, and no net has been found necessary to insure an abundance of plants for the requisite crops.

Seeds will germinate at considerable depth, but, as a rule, the diameter of any seed is sufficient depth for it to be covered with fine mould. Yet we sow Peas 2 or 3 inches deep, Beans an inch or two deeper, and other seeds correspondingly according to size. To secure to them the requisite conditions of uniform moisture without depriving them of air and warmth, seeds, as a rule, require to be sown deeper in light than in heavy soils, and they take more time in the latter for germination than in the former. Apart from these considerations the less deeply seeds are sown the better, always provided the soil is compact and uniformly moist.

There is a difference of opinion as to the distribution of the seed. Some advise thin sowing; it has the advantage of economy, and of securing a sturdy plant, giving it plenty of light from the start; but it has the disadvantage that if any of the seeds fail, or the seedlings are destroyed, the crop is a thin, patchy one, and the season may be lost by having to sow over again. There is no reason why either one or the other extreme of thin or thick sowing should be practised, for the sower of a fair quantity of seed steers clear of the disadvantages of both, and has a margin for contingencies both ways—the loss of seedlings, while having a choice of the best plants in thinning to remain for the crop.—G. ABBEY.

MASTERING THE ONION MAGGOT.

ON page 159 of last week's *Journal of Horticulture* "W. S. E." asks how he may battle successfully with the Onion maggot, and the editorial footnote, inviting correspondents to detail their experience in the matter, serves to show the importance of the subject. The remedy or rather preventive which I am going to recommend is as simple as I have proved it to be effective for nearly quarter of a century, namely, soot. I am a strong believer in the efficacy of soot, not only as a purifier and fertiliser of the soil, but especially as a means of ridding the latter of all maggots and other creatures injurious to underground growth, and rendering it distasteful to the establishment therein of fresh colonies.

My Onion crop always follows Celery, and is sown as early in February or March as the ground is in suitable condition for working. The Celery is taken up and laid in the soil the same depth as before in a north border. The ground is then levelled, dug a full spit deep, and trodden over, afterwards spreading on a good surface-dressing of soot, say sufficient to well discolour the ground, and incorporating it with the soil with a coarse rake before drawing the drills; these are about 1 inch deep and 1 foot asunder, and running north and south. The seed is sown thinly, the soil closed in and raked over in the same direction as the drills. Thus treated I have never had my Onion crop attacked by the maggot resulting from the Onion-fly (*Anthomyia ceparum*) or any other kind of insect.

I use soot in the manner indicated and with the same results every year for Turnips, Carrots, Parsnips, and plantations of Lettuce and Parsley plants. I also dip the roots of Cabbage plants, Cauliflowers, Broccolis, Brussels Sprouts, Savoys, and Borecoles in a stiff "puddle" into which a double handful of soot had been stirred, with the object of rendering the roots distasteful to the attacks of grubs, with the most satisfactory results. I have at various times advocated the use of soot for the crops referred to, especially the Onion crop, and have had the satisfaction of both hearing from and reading of those who had followed my advice being rewarded with complete success. All the soot made at this establishment is used in the gardens. I am strongly of opinion that very few insects are to be found in sweet fertile soil, and I am quite certain that maggots are to be found in plenty in ground rendered foul by heavy dressings of rank farmyard manure, ploughed or dug into the ground a short time before sowing or planting.

As soon as the Onion plants are large enough to get hold of they are thinned, and any blanks made good with the thinnings, dibbing them into the soil the same depth as they were in it before, and pressing the soil about them, doing the work if possible in showery weather. From the time the plants appear and until they have nearly completed their growth, the soil is periodically stirred to a depth of 1 or 2 inches with the Dutch hoe two or three times

in the course of five or six weeks, with the double object of accelerating growth and destroying seedling weeds. Last week I availed myself of the first opportunity that offered this season to get my Onion crop in, the ground being in good condition for doing the work.—H. W. WARD, *Longford Castle*.

My experience with this pest points to preventive rather than remedial measures. The nostrums usually recommended, such as frequent sowings of soot, solutions of nitrate of soda, and a mixture of softsoap and petroleum, are all useful from a manurial point of view, stimulating the plants, and thus enabling them to overcome, to a certain extent, the evil effects of the maggot, and the same may be said of frequent drenchings of liquid manure from the farm. If, however, the maggot once gets a strong footing, none of these agents can be used sufficiently strong to destroy it without, at the same time, destroying the plants. I found years ago that when the weather was sufficiently dry to enable me to sow my Onion seed early in February, and the plants met with no serious check from bad weather afterwards, that they were seldom attacked by the maggot, whilst those sown a month later generally became a prey to the pest. This led me to adopt the plan in general practice for producing exhibition bulbs—viz., that of sowing the seed from the middle to the end of January in boxes or seed pans, and placing them in cold frames or some position with plenty of light in a temperature of about 40°. With this treatment the plants are sturdy and ready to transfer to beds prepared in the usual way for seeds early in April. For the past six years I have secured grand crops free from the maggot by adopting the simple practice indicated.

As a farther demonstration that early raised plants is the secret of escape from maggots, I may say that every season we sow a few rows of seeds in the ordinary way by the side of the transplanted ones, and these are invariably infested with the enemy. Last season, when nearly all Onions around us were destroyed, we had a splendid crop of fine shaped bulbs, weighing from 4 ozs. to 8 ozs. each, with scarcely any neck and entirely free from maggot. They were ripe and cleared off early in August, and the ground planted with Strawberries. This early ripening is of great advantage, the bulbs always keeping better than when they continue growing until late in the season, and is the result of early sowing and transplanting. We expose the bulbs for a month to the sun, spreading them on shutters, and as a result we have at present a good supply of Onions as sound as when first harvested. With the exception of Silver Skin for pickling we only grow two varieties—Veitch's Maincrop and James' Keeping. They are planted 12 inches by 8 apart, only just burying the roots, so that the future bulb will be almost entirely on the surface.

All who have paid the least attention to insect life must often be struck with the wonderful sagacity insects seem to exhibit; hence I would venture to suggest that when the Onion fly visits these strong early plants for the purpose of laying her eggs she may have a suspicion that the newly hatched tender larvæ will be unable to penetrate their skins, which would be much tougher because older, and not buried so deeply in the soil as those of plants sown in the ordinary way. Or it may be the fly does lay her eggs on the strong in common with the weaker plants, but may perish through being unable to effect an entrance through the stronger walls of the early raised plants. The latter remarks must be taken for what they are worth, and may be verified by those who have more time to give to the subject than I have, but they are the only explanation I can offer for the fact that, while the early raised, transplanted Onions entirely escape, those sown in the ordinary way on the same plot are always more or less severely attacked by the Onion maggot.—J. H. W., *Leicester Frith*.

I WAS very pleased indeed to see an appeal for "mastering the Onion maggot." Now, perhaps, we shall find a way to conquer this pest. I have found the following practice effectual to eradicate the Onion maggot. In the autumn procure a quantity of gas lime, and spread it on the ground intended for Onions, about 1 inch thick; dig it in and leave it as rough as possible for the frost to penetrate. Then when preparing the bed give a good dressing of soot and salt. This treatment I have found answer admirably.—C. BELLWOOD.

ABOUT fourteen years ago I found my early Carrots failing when they were about the size of my finger, also rows of Parsley, and likewise the Onions when they were 6 or 8 inches high. Maggots were the cause of the failure. I was advised to apply gas lime to the ground about one month before sowing the seed, and I have found it to answer well for Onions, Carrots, and Parsley.

Every year I obtain a cartload of gas lime and spread it over the ground, which has been deeply dug or trenched as early in the autumn or winter as was convenient. About one good handful is spread on a square yard, but as I know how much to use I generally spread it on with the spade, then about a week before sowing the seed I dress the ground with soot and fork it over. When the Onions are 4 or 6 inches high I give them a dusting of soot about once in three weeks in showery weather, or if the weather is very dry, as it was last spring, I give them a light watering after each dusting. Since I have adopted this plan I have not been troubled with maggots in the Onions, Carrots, or Parsley, and therefore I have great faith in gas lime as prevention of the pests, provided it is used a sufficient time before sowing.—DAVID HOBBY, *The Gardens, Brympton House.*

IN responding to the appeal in your last issue of the *Journal of Horticulture* I heartily give my experience on the cultivation of the Onion. When I first took up my position as head gardener I used to lose nearly the whole of my Onion crop through the maggot, but, thanks to continued perseverance, I am now able to successfully combat the enemy. I have had splendid crops for the last seven years, and have won numerous first prizes at the shows.

I will begin with the preparation of the soil, which always takes place with me in the autumn. The plot of ground intended for Onions should be well exposed to the sun and air, not shaded by trees. A rather light soil and of good depth is preferable to strong heavy land. Double dig the ground, taking out a trench, and wheeling the top spit to where it is intended to finish, put a good layer of rich manure on the bottom of the trench, turn this under, put in another layer of manure, then turn the top spit of the next trench on this again, and proceed with this operation until the whole plot of ground is finished. Nothing more is required until the beginning of the following first week in March, then, when the soil is in good working order, make up a mixture consisting of two parts fresh soot, two parts superphosphate of lime, and one part kainit; mix well and apply a moderate dressing to the surface of the ground. Point it in with a fork, taking care not to bring up the manure applied in the autumn. When the soil is dry enough tread it firmly, level with a rake, taking away all rough clods and stones, draw drills from 10 to 12 inches apart, and just deep enough to allow of covering the seed lightly.

When the plants appear and the rows can be easily seen use the Dutch hoe to loosen the soil and destroy weeds. Thin out when the seedlings are 3 inches high, and continue the use of the Dutch hoe once a week until the bulbs are about as large as a sixpence. I do not use the hoe afterwards, as I think it cuts some of the roots, but employ a small fork attached to a long handle, and just loosen the soil very lightly, each time sprinkling a little soot between the rows, and also give a light dressing of superphosphate about twice during the growing season. It is almost impossible to make the soil too rich; poor cultivation is the cause of many failures in growing Onions. If liquid manure can be had, give the ground a good soaking three or four times in the course of the season.

When the plants are about three parts grown the tops are bent down, and this increases the size of the bulbs. As soon as growth has ceased take the Onions up, and spread them in thin layers in dry open sheds, or, what is better still, on the stage in a greenhouse, where they can have the full power of the sun to ripen them. The more they are ripened the better they will keep. In storing them for the winter they should have a very dry place; they will not keep well where it is damp. Mildew attacks them, and also damp starts them growing.

If extra large Onions are required for exhibition the seed should be sown in pots or pans, January or early February, placed on a shelf close to the glass. When the seedlings are 3 inches high prick them into boxes 2 to 3 inches apart, still keeping them in the greenhouse until about 6 inches high; afterwards shift them into cold frames. Gradually harden off and plant out at the end of April in ground prepared as previously recommended.

Where time and convenience are at command the latter method is much the best for the whole of the crop, as double the weight of Onions can be had than by sowing in the open ground, the bulbs being equal in size to the finest Spanish, and there is no fear of the maggot. Some gardeners I know object to this method, and say that the large Onions do not keep well. I can assure my readers that the bulbs will keep if properly ripened and stored in a very dry place. I have kept some of mine for ten months after being taken out of the ground.—T. DAVIES, *Radhurst House, Barton-under-Needwood.*

[Our correspondent sends Onions as firm and as fine as we could desire to see. A crop of such Onions at present prices would be worth more than £100 an acre. We have other communications.]

HYBRID PINKS.

MORE than usual attention is just now directed to our old-fashioned Pinks as garden flowers, both for border decoration as well as for exhibition purposes, and it is very refreshing to some of us "old boys" to find the old florists' laced edged varieties being improved by such raisers as Fellowes, Hooper, Paul, Thurstans, Brown, and others. My object, however, now is to draw attention to what can so easily be done if growers will only take up the work, that of hybridising in the *Dianthus* family, for here in Birmingham one of our best Carnation growers has for three years now been at work crossing the *Marguerite Pink* (not Carnation, as it is erroneously called) with the Carnation and Picotee, and it has resulted in a grand lot of *annual* Carnations in this sense only, that from seed sown in February and March strong plants can be easily had in bloom in the following August, which is a great saving of time. In all other respects they can be treated in the same way as tree Carnations, as they are of a sub-shrubby or branching character, and will bloom out of doors when needed, propagation being effected by cuttings or layers.

We have very attractive varieties of the common garden Pinks, some of which emit refreshing fragrance, especially the old Double White, which exists in almost every garden. What a field there is open for hybridising our garden Pinks with the *Dianthus* Heddelegi section, or the old *Dianthus chinensis*, or the *Marguerite* Pinks, and to do this with a fair prospect of success plants should be grown in pots for the blooms to be fertilised, so as to ensure under glass the ripening of the seeds in the event of a wet summer and autumn.

The *Dianthus* family is a very numerous and varied one, from the charming little gems from the Alps to our grand varieties of Carnations and Picotees; and in the hands of a hybridiser many beautiful new garden varieties could soon be procured. I hope these few words will induce some of the younger men to try their hand at the work.

Many of our grand herbaceous plants present a great field of operations to our hybridisers, and good work is being done in places. A gentleman in the city of York has for years past devoted great attention to Flag Irises and *Hemerocallis*, producing some very fine hybrids, and his garden is crowded with seedling plants. Take *Campanulas* and *Platycodons*, for instance, of which there are so many species and varieties, all more or less beautiful, ranging in height from a very few inches to 4 to 5 feet in height, and what hybridising could be done with them.

Thanks to such men as your correspondent, Mr. Arnott, who writes so lovingly of his pets, and must have a rare collection of plants, and other writers and cultivators, our herbaceous and Alpine plants are kept well to the front, and deservedly so, for they are amongst the most interesting of hardy garden plants, and so easily cultivated, although unfortunately are at times met with in a very uncultivated state.

Perhaps you will just let me add a word or two as to collections of these flowers at exhibitions. There should be some restriction as to the size of the bunches, and rarer species and varieties should have more consideration. I am not the only judge at floral exhibitions who get somewhat bewildered at shows from the want of more definite instructions in schedules, and a conference of judges in the work of flower shows for the purpose of framing a code of instructions to horticultural societies in general as to the wording of their schedules would be a boon indeed.—W. D.

NEW SNOWDROPS.

SEVERAL new Snowdrops, which have flowered in this country in 1894 for the first time, may perhaps be worthy of a brief notice. Of these the majority have been introduced through the enthusiasm of Mr. E. Whittall of Smyrna, who has with so much liberality distributed them. They appear to be all varieties of *G. Elwesi*, but some have very distinct features, making them worthy of varietal names. One of the best of these is one sent as *Galanthus Aidin*. This is of erect habit, throwing the blooms well above the foliage. The flowers are short, but of good form, and distinguished by the claw-like formation of the outer petals, and in consequence Mr. J. G. Baker suggests that if a distinctive name is required for this plant it should be *G. Elwesi* var. *unguiculata*. For garden purposes this would be one of the best of the varieties of *Elwesi*. Another form has been sent as *G. Cassaba*. The greater number of the flowers of this have the large green blotch connected with the apical ones by a narrow green mark. This is not, however, invariable, and the distinctive feature is the thick, erect, and long leaves which fold over each other at the base. The form of the flower is unlike that of *Elwesi*, but as Mr. Baker cannot distinguish any botanical difference between this *Cassaba* Snowdrop and

Elwesi, it must be classed as a form of the latter. A Snowdrop from Samos proves to be a small but neat variety of Elwesi, which will probably show some improvement next year. One from Kas Dag, which Mr. Whittall considered the finest form of G. Elwesi he had ever seen, has hardly been long enough established to show its value, but some of the flowers have improved so much since opening that there is every probability that this will prove an exceptionally fine variety. G. Taurus I have not grown, but reliable authorities have formed very conflicting opinions regarding it, one describing it as a good form of Elwesi, and some others as very poor. G. Phænika Samos and G. Anamas Dag do not appear to have flowered in this country this year, but both have distinct looking leaves. Our gardens will be greatly indebted to Mr. Whittall for his disinterested efforts, as besides Snowdrops several Fritillarias, Tulips, Chionodoxas, and other bulbs have been distributed to various public and private gardens.

Among the best of the Snowdrops of the year is one which has been introduced as G. robustus, but which, like the others already spoken of, is only a variety of Elwesi, but with very large flowers and fine foliage. The bulb is large, and not unlike that of some of the Narcissi. I do not know to whom we are indebted for the discovery of this Snowdrop, but it was offered largely by an Italian firm in the autumn of last year.

A Snowdrop which I received last year from a correspondent in Broussa as G. plicatus has, as I anticipated, proved to be a different species, and is pronounced by Mr. Baker to be nearest G. byzantinus. Mr. James Allen, our Snowdrop specialist (if he will allow me so to call him), observes several points of difference in the bulbs and leaves from byzantinus as first introduced. G. byzantinus seems to have come first from the European side of the Sea of Marmora. The Broussa form has fine large leaves and blooms on a good stout stalk. The flowers are mostly marked like those of G. Elwesi, but in some the basal blotch is absent. A single plant of a handsome little Snowdrop has appeared among a number of G. Elwesi I had from the Bithynian Olympus in 1892. This has the flowers of Elwesi, but the leaves are a bright glossy green, deeper in colour than those of G. latifolius, but only half an inch broad. The collector has been unable to find any others of a similar colour, so that this is probably unique.

Mr. Allen kindly sent me a short time ago blooms of two of his new seedlings. One of these (G. nivalis "Demo") is the finest Snowdrop I have ever seen, and is of the true nivalis type, with very long outer segments of perfect form. A great feature of this beautiful flower is the length of the drooping part of the flower stem, which is nearly twice as long as usual. The graceful effect thus given to an otherwise beautiful flower is very noticeable, and the nymph Demo has been honoured in the choice of a flower to bear the name. The other seedling (G. Victor) is understood to be a hybrid of plicatus and Elwesi, and is of a different type of beauty, with short segments of great substance and good form, and with the inner segments almost entirely green. It is an extremely fine flower, and worthy of its distinctive name.—S. ARNOTT.

NOTES ON GRAPES.

MADRESFIELD COURT GRAPE.

IN the year 1879 a prolonged correspondence was carried on in the pages of this Journal concerning the cracking propensities of Madresfield Court. At that time I was employed at Brettanby Manor, North Yorkshire, where I first had anything to do with its cultivation. The remarks contained in the enclosed cutting taken from the *Journal of Horticulture* of November 20th, 1879, and which I contributed, prove interesting in connection with what Mr. Iggulden has written on page 142.—THOS. RICHARDSON, *The Gardens, Simonside Hall, South Shields*.

So much has been written lately in the Journal about the fruit of Madresfield Court cracking that I should like to give your readers my experience of this Grape. We have only one young Vine of this variety, this being its fourth season of fruiting. Previous to 1878 the fruit had cracked immediately it began to colour. In July of that year, when the fruit had fairly commenced to colour, the cracking commenced as usual. The weather was very fine, and in consequence no fire heat was employed. While trying to think of something that would prevent the further cracking of the Grapes the idea occurred to me that a higher night temperature, combined with an adequate amount of air, might have the desired effect. I at once lit the fire, and maintained a night temperature of from 65° to 70° till the Grapes were ripe, with the result that in the eight bunches on the Vine there were not more than a dozen cracked berries, and I am satisfied there would not have been any at all had I applied the fire heat earlier. This year the same treatment has been attended with the same results, except that there has been no cracking whatever, although, owing to the dull wet season, it has been much more difficult to keep up the required temperature. The Vine in question has its roots outside. In the same house are Muscat Hamburgh, Black Hamburgh, Muscat of Alexandria, Chasselas Musqué,

Lady Downe's, Buckland Sweetwater, Royal Ascot, and Trentham Black, all of which have been highly benefited by the extra heat. A miscellaneous collection of greenhouse plants are grown in the vinery all the year through, yet the Vines are clean and healthy. I think if growers of Madresfield Court would state under what conditions they grow it, it would be a great help in arriving at the real cause of the cracking.—T. R.

BLACK HAMBURGH VARIETIES.

MR. IGGULDEN in writing about Black Hamburgh Grapes in the *Journal of Horticulture*, February 8th, page 101, mentions three varieties. I think he must be mistaken, and venture to say that he has two kinds wrongly named. I have seen the Black Hamburgh Vine in many places in this country, and seen the fruit in various forms brought about by different soils and methods of cultivation. Many times I have thought that our modern built vineries and the high cultivation followed at the present day are not so well suited to this variety. I am strengthened in this opinion, too, by the fact that some noted Grape growers fail to produce it in its best form. The liberal treatment necessary for such varieties as Black Alicante, Gros Colman, and others of the same class, results in too strong and pithy wood in the Black Hamburgh. Fine handsome bunches are usually produced from such wood, but the berries are always wanting in finish, and lose colour soon after ripening.

Mr. Iggulden is not likely to go far wrong in this direction with his old Vine over a flue in a Muscat house. We have been told more than once in this Journal by some of the older gardeners that the Black Hamburgh Grape is not so well grown as it used to be. As far as I remember in places where I have been, say twenty years ago, very little attention was given it as regards the roots, therefore they rambed about outside the border getting food and moisture where they could. Often three or four rods were taken up from the same Vine, and if the natural soil happened to be favourable to them, fairly good results followed. Where I think we fail to get this Grape in perfection, is because we grow it too strongly. Mr. Taylor in his "Book on Vines at Longleat" tells us of the rampant growth of the Hamburghs; but after the adoption of the extension system, I am told the Vines have been noted for the smallness of their wood and fine clusters of well finished fruit.

A few years ago we were told, I think by Mr. Iggulden, of the success of some young Vines planted in a very narrow border. If my imagination does not deceive me, the fruit from these Vines have taken first prizes three or four years in succession at some of the largest shows in the country. These facts tell us that vigour in this variety does not mean success with the fruit.—J. B.

ORIGIN OF THE SOUVENIR DE LA MALMAISON CARNATION.

I DO not presume to give the origin of the Souvenir de la Malmaison Carnation, but with your permission I offer the following to "E. C." (page 128). In the early '60's the late Mr. Robert Parker of Tooting used to visit me frequently in France. I then cultivated this Carnation pretty well, and I sent him several plants of it. I understood then that it was of Nancy origin. Mr. Parker, as was well known in those days, was instrumental in distributing many new and rare plants—rare plants chiefly, as he visited gardeners freely and outlandish places; and I may here mention one plant of which I could then have sent him cartloads—but he was content with a few basketfuls—I allude to the large Niger Hellebore, not by any means common yet. When I went to Floors in the later '60's I again took to growing this Carnation, so much so that the present Dowager Duchess of Roxburghe had nosegays of them sent to the Queen at Balmoral, and even to Windsor. It was also found in perfection in many of the East Lothian gardens, and no doubt some of those gardeners who are still living—to wit, Mr. Thomson, of Drumlanrig—could add to these notes. Mr. Parker acquired the Countess of Haddington Rhododendron from the late Mr. Thomas Lees of Tynningham, the raiser, and he may have sent this Carnation to him for aught I know.—K., *Lacken*.

RUBBISH.

IN the economy of Nature philosophy will not admit any such designation within her dominion. In either province of the kingdom, animal or vegetable, there is no surplus matter to which we for our own use apply the term of rubbish. In life or in death all is necessary, in the latter decaying matter contains those elements without which the constant rebuilding would be stopped, and our planet become like its lunar satellite—a dead world. And so through the vista of ages has the vast work been carried on down to our own times with the many variations that geology shows. The same material, nothing added beyond those inappreciable quantities of meteoric matter that do at times find their way to us from interstellar space. Nothing taken away, nothing to spare; the Great Builder requires all the material, and has no rubbish heap.

We builders and constructors on a small scale have, or think we have, this surplus matter—this rubbish, the disposal of which is a matter of some moment to us, and are now awakening to the fact that even this department of our gardens is being clothed with interest by the light thrown on it by scientific observation. Hitherto it has been the rule to remove this so-called rubbish to the heap outside the garden walls.

Carting out at one door this surplus matter with all its constituents of the various salts analysis shows it to contain, carting in at another door the new material in the form of manure, thus creating a new way to pay old debts. Of these two doors one must undoubtedly ever remain an open one—viz., that of ingress for additional fertilising matter, for besides that continuous removal to the rubbish heap other agencies, such as the vegetable, the fruit, and even the flower basket, are ever drawing on the funds, and possibly atmospheric agencies insidiously assist in the robbery.

High pressure has caused in other phases of life radical changes. Modern ingenuity in the various industrial arts has discovered ways and means by which their waste material—the rubbish—has been utilised and made to contribute its share to the general good; and the same high pressure too, is surely if slowly invading our domain, compelling us to adopt all and every means to the end of economy. Each year appears to bring in its train some additional work in all departments of gardening, and in the neck to neck race with Father Time we, whilst being handicapped with increasing cares, find some difficulty to keep up with our competitor whose age seems only to give him increased swiftness, and any way by which we can circumvent him is, however insignificant it may appear, not to be despised.

In the good old days, when all went on in a free and easy manner, before the heavy strain of bedding out had been introduced by Fashion, and the multiplicity of requirements she now exacts from us were unknown, it was possibly more the endeavour then to kill time, whereas it is ours now to catch it if we can; but Science has come to our aid and revealed to us of later days what to them were all but hidden mysteries, though even in those days some gifted with stronger mental vision could see the shadows of coming events. One, a far-seeing Scottish nobleman, told his gardener that the day would come when one waist-coat pocket would hold all that was necessary to fertilise his garden, an idea this old gardener took *cum grano salis*. His reply was, "I nae doot it your grace, and the ither pouch will haud all the produce too." Neither lived to see the fulfilment of the prophecy, nor probably shall we, but fertilisers in concentrated forms are rapidly bringing into contempt that midden for which our forefathers had such veneration, whilst the formerly despised rubbish heap we begin to look upon with some respect.

According to the size of the garden two or more small plots of vacant ground of easy access to barrow or basket, and so situated as to command an area of the quarters devoted to vegetable culture, can be readily made the means of absorbing all this waste food at a great saving of time and labour. By opening a trench, say, 3 feet wide and two spits deep, removing the soil as in digging, an opening is formed for all the rubbish save woody matter, which must undergo the ordeal by fire. When this depth is half filled cover with the soil from the next trench, and so on across the plot.

Another plan I have adopted where it is necessary to raise Asparagus from seed without disturbing the plants, is to outline the bed and remove the soil to either side for a final covering. If the mould is removed to the depth of a foot all decaying matter placed in makes a good foundation for the bed, which can finally be made up by a coating of farmyard manure and finished off with the soil in which the seed is sown.

Either or both of these simple plans are a boon in the rubbish question, and a blessing during a wet season, when growth is rapid and the wheelbarrow an undesirable vehicle on the walks. If one is fortunate enough to get one of those round plant hampers from the nursery, it is just the thing for a couple of men or boys to gather up all waste, and convey it to the position destined to receive it.

Truly it is but a simple plan, but I claim for it economy in the different lights touched upon. It is but a little thing this question of surplus matter, this closing the door to the rubbish heap; but these are times when we cannot afford to despise the little things of life, for they possess an importance out of relative proportion to their apparent magnitude.—E. K., *Dublin*.



SOME FINE CYPRIPEDIUMS.

GROWERS of choice Cypripediums will have no difficulty now-a-days in making a selection of kinds that produce very fine flowers, which show conspicuously amongst those of the ordinary type. The latter include some of the most beautiful species in cultivation, and are well adapted for general decorative purposes; but one might advantageously grow a few plants of the first mentioned group, if only to add variety to the collection.

Cypripedium Elliottianum is a remarkably showy species. Under good cultivation the scapes on fine plants rise to a height of 15 or 18 inches, and each one usually bears from two to five flowers. The lip is sometimes nearly 2 inches in length, and of a reddish brown colour. The petals are whitish, blotched and spotted crimson, drooping, and from 4 to 6 inches long, while the dorsal sepal is also striped with dark crimson.

Another splendid species is *C. Stonei*, which is now generally cultivated. In a warm house this handsome Cypripedium, according to my experience, makes rapid growth when once established. The scapes are frequently 2 feet in length, and bear two or three flowers of an enormous size. The petals are long and narrow, twisted, white, striped with reddish-purple, shaded yellow; and the dorsal sepal is of a similar colour. The lip is large, dull red, veined purple. The variety *C. Stonei platytænium* is even more beautiful than the type, but decidedly more rare, and is confined to a comparatively few collections.

C. Rothschildianum is another member of this group of fine Cypripediums, and when seen at its best is always admired. The



FIG. 30.—LÆLIO CATTLEYA TYDEA.

flowers are very handsome, three or four being borne on each scape. The dorsal sepal is oblong in shape, yellowish green, striped with dark purple, and has a white margin. The petals are similarly coloured, and the lip, which is stout in texture, is cinnamon coloured. A well-grown specimen of this Orchid presents a very fine effect.

Among hybrids, too, there are some flowers of gigantic proportions, one being *C. Morganiae*. This is said to be the result of a cross between *C. superbians* and *C. Stonei*, and first flowered in 1880. In general appearance the flowers much resemble *C. Stonei platytænium*, but those I have seen were rather brighter coloured. The dorsal sepal is of pinkish white, veined with red, the petals being pale sulphur yellow, blotched purplish brown. The lip is a dull rose colour veined crimson. A form exhibited at the Drill Hall some months ago under the name of *C. Morganiae langleyense* is also noteworthy for its size and attractiveness. There are several other large Cypripediums that should be included in collections where possible, such as *C. grande*, *C. phillipiense* and *C. caudatum giganteum*.—SPECIALIST.

LÆLIO-CATTLEYA TYDEA.

THE accompanying illustration (fig. 30) represents a bloom of *Lælio-Cattleya Tydea*, a beautiful Orchid exhibited by Messrs. J. Veitch & Sons, Royal Exotic Nurseries, Chelsea, at the Drill Hall, Westminster, on the 13th ult. This bigeneric hybrid is the result of a cross between *Lælia pumila* and *Cattleya Trianae*, the latter being the pollen parent, and it well deserved the award of merit adjudged by the Orchid Committee of the Royal Horticultural Society on the occasion mentioned. Like the seed-bearing parent, *L. pumila*, the plant appears to be dwarf in growth, but the flowers are of a moderate size. The sepals and petals are rosy mauve, the lip being a rich purplish crimson.



EVENTS OF THE WEEK.—The world of horticulture is somewhat quiet in London now, the only event being the meeting of Committees of the Royal Horticultural Society at the Drill Hall, Westminster, on Tuesday, 13th inst., particulars of which will be found below.

WEATHER IN LONDON.—During the past week the weather has been very variable. Last Thursday opened fine, but rain prevailed in the evening; Friday and Saturday morning brought frosts, though not of a severe nature. Sunday was bright and cold, a heavy hail shower falling in the afternoon, as also was Monday until the afternoon, when rain fell. Tuesday was bright until the evening, when the sky became overcast, but after only a little rain had fallen cleared again. Wednesday opened somewhat dull, but at the time of going to press genial spring-like weather prevails.

WEATHER IN THE NORTH.—The past week has been one of almost continuous wet, and many of the nights have been tempestuous. Rain, more or less, has fallen every day. On the 2nd we had some gleams of sunshine, and, after a wet morning, Sunday was a bright coldish day with N.W. wind; but before mid-day on Monday we had a return of wind and rain, and the night was very stormy. Tuesday morning opened fair, with a better promise.—B. D., *S. Perthshire*.

THE next meeting of the Royal Horticultural Society will take place on Tuesday, March 13th, in the Drill Hall, James Street, Westminster. Besides the usual display of new and rare plants, special prizes are offered for Daffodils. At 3 P.M. a lecture on the "Deciduous Trees and Shrubs of Japan" will be delivered by Mr. James H. Veitch, who has recently returned from an extensive tour in the East.

INTERNATIONAL HORTICULTURAL EXHIBITION.—We are requested to insert the following:—"If prize winners will communicate with Mr. Frank Cant, Braiswick Nursery, Colchester, they will hear of something to their advantage."

AUSTRALIAN FRUIT PRODUCTION.—Cable advices just received from Melbourne state that the current season's Raisin crop at the Irrigation Settlement of Mildura is a very heavy one. This represents the first considerable production of Raisins which has yet been made in the Australian Colonies, and (together with dried Apricots and other fruits, wine, olive oil) will, says Chaffey Brothers, Limited, constitute one of the chief articles of export from the Antipodes in the early future.

GARDENERS' ASSOCIATIONS.—In addition to those named by "D," page 164, in Hampshire I know such a society exists at Hambledon, not more than twelve miles from Botley, which has been in existence certainly ten years. It is doing good work in its neighbourhood, although public notice is not often taken of its meetings. The Association in question holds an annual autumn Exhibition of an interesting and useful kind.—E. MOLYNEUX.

DESTRUCTION OF GARDEN CROPS AT CORK.—Owing to the unprecedented severity of the winter the entire Broccoli crop of the market gardens in the neighbourhood of Cork has been completely destroyed. The total loss is estimated upon a careful calculation at £8000. As many of the market gardeners were dependent on this crop for their support during the spring months, and also for their payment of their March rents, they are reduced to a pitiable condition. The Mayor and some benevolent citizens have started a relief fund.

VIOLETS.—During last month I made a call at Benham Park, a well-known place, and for so many years associated with the name of Mr. Howe, who was gardener to Sir Richard Sutton. The gardening reputation of the place is well maintained by Mr. Howard, and the present occupier (Mrs. Myers) evidently appreciates good produce, and plenty of it. I was particularly interested with a low pit of about twenty lights filled with Marie Louise and Neapolitan Violets—a mass of bloom, and in perfect health. If Mr. Howard would give his method of culture for the benefit of the readers of the *Journal of Horticulture* I am sure it would be valuable, as few people get overdone with Violets, and their culture is not thoroughly understood.—R. M., *Newbury*.

THE annual Exhibition of the WOODSTOCK HORTICULTURAL SOCIETY will this year be held in Blenheim Park on Tuesday, September 11th.

AN offer made by Miss Marian Brockhurst, to build a museum in the Public Park of Macclesfield and endow it with £100 a year, has been accepted by the Park Committee.

GARDENING APPOINTMENT.—Mr. John Bluck, late gardener to F. W. Lyndon, Esq., Moseley, Birmingham, has been appointed head gardener to Baron Henry de Worms, Henley Park, Guildford.

DEATH OF MR. W. L. SKINNER.—We regret to announce the death of Mr. W. L. Skinner, Silcoates Nursery, Wakefield, which occurred suddenly on Monday, February 26th. The deceased was in his sixty-third year, and leaves a widow, five sons, and three daughters.

NATIONAL AURICULA AND PRIMULA SOCIETY.—The seventeenth annual report of the southern section of this Society has reached us. It contains, in addition to the rules and balance sheet, selections of the best show Auriculas and Primulas, compiled with the assistance of many of our leading growers.

NUNEATON FLORAL SOCIETY.—Mr. Henry Lester presided at the annual meeting of the Nuneaton Floral and Horticultural Society, which was held at the Newdegate Arms on February 21st. The Secretary, Mr. M. Black, read the balance-sheet, which showed a deficiency of £23, as compared with £17 last year. It was decided that the annual Show should be again held on August 19th.

NEWCASTLE AND DISTRICT HORTICULTURAL MUTUAL IMPROVEMENT SOCIETY.—The last monthly meeting of this Society was held on February 14th. Mr. Murray, Oakwood, presided over a good attendance of members. Several specimens were submitted to the meeting for identification. Mr. Pinkney then read an instructive paper on the "Cultivation of the Gladiolus." A discussion followed, in which several of the members took part.

BRIGHTON AND SUSSEX "NEW" HORTICULTURAL SOCIETY.—From the comprehensive schedule of this still called "new" Society we gather that the spring Show opens on April 3rd, the summer Show on August 28th, and Chrysanthemum Show on November 6th. We are glad to notice that the London, Brighton, and South Coast Railway will convey plants, flowers, fruit, and vegetables to the show free of charge, also (if unsold) will return them at the owner's risk to the station from whence they came.

"CANSELLARYS" AND "ROSYDANDRUMS" (p. 165).—This modified pronunciation of Calceolaria is by no means uncommon, as I have heard it, chiefly among cottagers, for many years past. Another form is "Cal cylary," which is much nearer the correct word. I may add that I know some people who call Rhododendrons "Rosydandrums." Here "rosy" is literally a translation of the Greek word *rhodos*, and "dandrum" is not a bad shot at *dendron*, a tree. A slip, more of the tongue than anything else, frequently made even by gardeners is 'Anenemies' for Anemones.—JOHN WEATHERS.

PRIMULAS FROM CHELSEA.—Messrs. J. Veitch & Sons, Royal Exotic Nurseries, Chelsea, send us a box of Primula blooms. The flowers are very fine, being also noteworthy for substance and variety of colour. The Queen is a beautiful variety, white faintly tinted blush with a rich orange-yellow eye. Queen Rose is a charming companion to the last-named, and Chelsea Scarlet is of an exceptionally rich hue. Veitch's Red is a good dark variety. Magnum Bonum is a huge flower of a lighter shade. The other varieties included Double Rose, Double White, Double Crimson, and Chelsea Blue—a good representative collection.

HORSERADISH.—When asking for a piece of Horseradish to illustrate a point a short time ago I was led by an obliging gardener to the bed, which proved to be established, of all places in the world, beneath a pyramid Pear tree. It was enough to make anyone quake to see a fork being vigorously wielded in order to get some of the thongs when it was borne in mind that the tines were tearing amongst the roots of the tree. It is fortunate that the demand for Horseradish in the place is so small that it is only called for once a year, and that at Christmas time; but even considering that, the base of a fruit tree can hardly be looked upon as the best place for a bed. The excellent ridge system described in the *Journal* years ago by Mr. Wills seems to have gained no hold in the south, in many parts of which it is quite unknown.—W. P. W.

— A NEW USE FOR MICROBES.—The economic use of natural resources has not yet reached its limit, if we may judge by the latest suggestion, which is to extract and make use of the colouring matter in microbes. Supposing this idea to be developed, gardeners will be well content to see it adapted to such familiar pests as red spider and green fly. If insect extract can be made to take the place of aniline dyes the heart of the horticulturist will be glad.—WANDERER.

— SHEFFIELD BOTANICAL AND HORTICULTURAL SOCIETY.—The fiftieth annual report of this Society has been received. According to the Treasurer's account for the year 1893, which is embodied therein, progress generally may be deemed satisfactory. During the year interesting collections of plants and birds have been presented to the gardens, particulars of which, with the names of the donors, are given in the report now before us.

— CHEMICAL MANURES.—In sending us Messrs. Proctor and Ryland's catalogue of manures, Messrs. Edward Webb & Sons, Wordsley, direct our attention to the following reminder:—"The Fertilisers and Feeding Stuffs Act of 1893, which came into force on January 1st of the present year, makes it imperative for all manufacturers or dealers to state the analysis of the fertilisers upon the invoice, and the invoice is to have the effect of a warranty. In common with all honest and respectable manufacturers of chemical manures, we hail the advent of this measure with great satisfaction."

— NATIONAL CARNATION AND PICOTEE SOCIETY.—The southern section of the above Society have issued their seventeenth annual report, and it is, on the whole, a very satisfactory one. It contains allusion to the publication of the "Carnation Growers' Manual" last year. All members entitled to copies have had them sent free of charge, and so far the sale has been very satisfactory, upwards of 1000 copies having been disposed of. Through the kindness of the President, Mr. Martin R. Smith, packets of Carnation seed, saved from the best fertilised varieties, have been distributed to all members who have applied for them upon the forms distributed for the purpose. Prizes will be offered in 1895 for the best plants raised from this seed.

— DIGGING AMONGST RASPBERRIES.—Numerous as are the times when this practice has been condemned it still exists, and is, in fact, practised widely. There is great probability of its being encouraged by the practice of the market growers, who run a plough through the lines of stools; but it should be remembered that in connection with a fruit containing so marked a stay-at-home root system as the Raspberry, there is all the difference in the world between running a plough down the centre of lines 3 or 4 feet apart, and digging close to the stems. In the former case, few if any of the roots are torn away, for the reason that the majority of them do not run far afield, but in the latter case the implement is brought much nearer home, and does damage.—W.

— MARKET GARDENING VERSUS LITERATURE.—A weekly contemporary, in dealing with a biography of the poet Coleridge, recalls the passion for gardening possessed by that eminent writer. Coleridge, it is related, proposed to himself a course of life which was simplicity itself; he was going to pass his days in gardening and his evenings in literature, estimating his probable income from the latter at £40 a year. He is contrasted with Alphonse Karr and R. D. Blackmore, the latter of whom is credited with making as good an income out of market gardening as he does out of his books, which is, to say the least of it, very doubtful. The French writer undoubtedly achieved a modest success out of market gardening, but, on the whole, the results are not so encouraging that literary men can be counselled to turn to it wholesale as a means of eking out a precarious income.—S. W.

— AMERICAN ORANGES.—The American Orange industry evidently has a bright future. Fruit of American growth has been recently introduced into England, and if the experiment is a financial success, shipments will also be made to Holland and Belgium, and perhaps also to Northern Germany. According to the "National Hotel Reporter," the first shipment from Jacksonville, Fla., was made September 21st, and the Oranges were sold in Liverpool, October 6th, at prices ranging from 11s. to 16s. per box, the average price being 13s.—about 3.15 dols. The culture of Oranges has grown enormously in Florida since 1835, when the yield was less than 1,000,000 boxes. This year's crop is estimated at 4,500,000 boxes, an increase of 500 per cent. in eight years. If this rate is kept up for another eight years, Florida will be able to supply all Europe with Oranges, and have enough left for home consumption.

— A GOOD EARLY CARROT.—Among Carrots of the Horn type Early Nantes has held the place only to be won by oft-proved merit in the minds of many gardeners, but independent report speaks highly of the claims of Sutton's Early Gem, and pronounces it to be a distinct advance on the valued old sort which has been esteemed for so long.—R.

— SUSSEX RAINFALL IN FEBRUARY.—The total rainfall at Abbots Leigh, Haywards Heath, Sussex, for February was 1.80 inch, being 0.60 inch below the average. The heaviest fall was 0.44 inch on the 17th; rain fell on fifteen days. The maximum temperature was 52° on 11th and 27th, the minimum 22° on 21st and 22nd; mean maximum, 46.11°; mean minimum, 34.04°; mean temperature, 40.07°, about 2° above the average. Vegetation is very forward for the time of year.—R. I.

— WEATHER DURING FEBRUARY IN SOUTH WALES.—The following is a summary of the weather here for the past month:—Total rainfall 5.68 inches; rain has fallen on eighteen days; snow on one day, snow and rain on one day. Maximum in any twenty-four hours 0.94 on the 17th. Number of hours sunshine fifty-seven and a half hours. Maximum amount on the 19th and 28th. Number of days on which the sun shone, eleven. Frost was registered on nine days, sharp from the 19th to the 23rd. Very strong winds at intervals throughout the month. Total rainfall for the same period, 1893, 8.88 inches.—W. MABBOTT, *The Gardens, Gwerllwyn House, Dowlais, Glamorgan, S. Wales.*

— FEBRUARY WEATHER IN HERTFORDSHIRE.—The past month will be noted for the succession of gales which we had, and with the exception of a lighter rainfall, has in other ways resembled the corresponding month of 1893. Some very sharp frosts occurred between the 18th and 26th, but on the whole the weather has been remarkably mild and open, with almost a total absence of snow. Rain and snow has fallen on fourteen days during the past month. Maximum in any twenty-four hours was 0.43 on the 17th, minimum 0.01 on the 12th, total during the whole month 1.71, against 2.78 of 1893. The dry weather of 1893 set in on March 5th, and those who suffered through the drought of last year will now be looking anxiously forward in order to try to ascertain whether they may expect weather like that of 1893.—E. WALLIS, *The Gardens, Hamels Park, Buntingford, Herts.*

— SUMMARY OF METEOROLOGICAL OBSERVATIONS AT HODSOC PRIORY, WORKSOP, NOTTS, FEBRUARY.—Mean temperature of month, 39.8°. Maximum on the 7th, 59.9°; minimum on the 19th, 8.8°. Maximum in the sun on the 27th, 104°. Minimum on the grass on 19th, -1.5°. Mean temperature of air at 9 A.M., 38.3°. Mean temperature of soil 1 foot deep, 38.9°. Nights below 32° in shade ten, on grass seventeen. Total duration of sunshine in month, seventy hours, or 26 per cent. of possible duration. We had nine sunless days. Total rainfall, 2.48 inches. Rain fell on fifteen days. Average velocity of wind, 156 miles per hour; velocity exceeded 400 miles on fourteen days; velocity fell short of 100 miles on seven days. Approximate averages for February:—Mean temperature, 39.5°; sunshine, fifty-six hours. Rainfall, 1.58 inch. The greater part of the month was mild and open, with very strong west winds. One week, however, was quite the reverse, with very sharp frost following on a heavy fall of rain and snow, which covered the ground to a depth of 3 or 4 inches. Vegetation very forward, but the blossom buds on fruit trees, Tea Rose trees, and shrubs are very badly cut with the frost.—J. MALLENDER.

— THE MIDLAND CARNATION AND PICOTEE SOCIETY.—The annual Show of this Society, except under unforeseen circumstances, will be held at the Botanical Gardens, Edgbaston, on Saturday, August 4th. Upwards of £125 are offered in prizes and medals, and the classes enumerated in the schedule are so varied as to permit of everyone who grows these plants competing if they wish to do so. A premier prize will be awarded to the best bloom in seven different sections, and special certificates will be awarded for varieties not in commerce, but which the judges consider worthy of such honour. Several friends of the Society offer special prizes, not alone for Carnations and Picotees, but for bouquets, sprays, and various plants. At the last Exhibition exceptional interest was centred in the display of Carnation and Picotee blooms staged in their natural habit of growth, and in consideration of which the Committee has decided to increase the amount of prizes for this class, and has introduced a new one, which will allow the smallest growers to enter. That excellent florist, Mr. Wm. Dean, Dolphin Road, Sparkhill, Birmingham, is the Hon. Secretary, and will forward any information required.

— TRENTHAM HORTICULTURAL SOCIETY.—A meeting of the Committee of this Society was held last week, over which Mr. W. A. Peake presided. The principal business of the meeting was to receive the resignation of the Hon. Secretary, Mr. John Taylor. After many expressions of regret Mr. Taylor's resignation was accepted, and the best thanks of the Committee accorded to him for his valuable services during the past five years. There is a large sum to the credit of the Society, the business of which has undoubtedly been ably managed.

— NATIONAL AMATEUR GARDENERS' ASSOCIATION.—The report of the proceedings of the Liverpool branch of this Association has just been issued by the local Committee. The Committee believe that membership in this Association had been productive of good and healthy results. The influence of the Association was becoming apparent, the Liverpool Horticultural Association, at their summer and November shows, having formed classes for amateurs as defined by the Amateur Gardeners' Association. The membership of the branch had increased from 109 in 1892-93 to 150 in 1893-94, and the receipts from £12 to £16.

— POISONOUS APPLES.—A correspondent sends us cuttings from a Liverpool daily paper wherein mention is made of three children having been poisoned in consequence of having eaten a large red-coloured Apple; one of the children died. Another correspondent states that he was made seriously ill after having eaten a "nice rosy Apple." Arsenic is suspected to have caused the mischief, but this is not yet proved. Another inference is, that the arsenic is the result of "spraying," but it must be remembered that spraying with arsenites is done only in the young stage of the flower, and that all trace of the poison has disappeared before the fruit ripens.

— THE "CORNHILL MAGAZINE" has some interesting remarks upon the FURZE (ULEX) and the WHIN (GENISTA) as affording evidence of evolution. It is contended by the writer that the Furze is a developed Whin, and that its spinous character is the result of a process of selection. The presence of Furze is most marked upon open commons where cattle and sheep browse, while the Whin grows more in sheltered spots to which animals have not free access. In its early stages of development the Furze closely resembles the almost spineless Whin. The conclusion, therefore, is that owing to the elimination practised by grazing animals avoiding the more spiny specimens of Whin there has in the course of generations developed upon commons and open spaces a new plant, the Ulex or Furze, which is in reality only a species of Genista and not a separate species of Leguminous plant.—M.

— SEED GERMINATION.—In spite of wide knowledge of the fact that seeds germinate more freely in darkness than in bright light, yet it is very common practice in the case of very choice and expensive seeds to sow them and stand them in the fullest light possible. In the economy of nature seeds naturally sown always germinate freely in shade, and often in deep shade, and, in the case of much of our garden seed, if either buried fairly deep if the seed be large, or if small well covered with some litter or shading, germination is quicker and more complete. But in sowing such fine seeds as Calceolaria, Cineraria, Begonia, Gloxinia, Lobelia, and many others, it is always best to either shade with thin paper during the day, or else cover the pots or pans closely with clouded glass. I have with great success used for such covering clear glass on which some fine sand is sprinkled, and this can be fined or thinned down as germination proceeds until the plants receive full light.—D.

— BIRMINGHAM AMATEUR GARDENERS' ASSOCIATION. — By the kind invitation of the President (Alderman Wm. White, J.P.), the members and friends of the above Association assembled at Severn Street School, on Wednesday, to hear a lecture from him on "Wanderings in Swiss Mountains and Valleys." The lecturer fully described the various points of interest to be seen in Switzerland, and by the aid of a limelight lantern gave views of some of the highest peaks, the most treacherous and picturesque passes, and the best known and most beautiful valleys, also glaciers viewed from different aspects. He enumerated the plants to be found in the snowy regions of the Alps, and spoke of the vast expanse of colour to be seen in July and August when the Rhododendrons and Gentianas were in full bloom. A very hearty vote of thanks was unanimously passed to the President for his very able and instructive address. Messrs. T. P. Cope, C. Daniell, C. F. Franklin, W. B. Griffin, A. Groves, Herbert Smith, and W. H. Wilks exhibited plants and flowers, some of which showed excellent cultivation, and the usual awards were made.

— HOW WEEDS ARE DISPOSED OF IN SOUTH AUSTRALIA.—A recent notice in the "Government Gazette" read as follows: "Weeds simply cut and left to be blown about will not be considered to be properly destroyed. If owners neglect to eradicate and destroy all noxious weeds on their lands, the Council may complete any such work left undone or unfinished, and may charge owners with the cost."

— VANILLA IN RÉUNION.—In a Consular Report recently published, Réunion is stated to be the largest Vanilla-producing country, nearly 96 tons, valued at £115,200, having been exported in 1892. Its quality is much appreciated in Europe, that from Mexico alone fetching a higher figure. The Seychelles Vanilla is recognised as much inferior. It is exported mainly by the Messageries Maritimes steamers to Marseilles and Havre at a freight of nearly £10 a ton.

— HORTICULTURAL CONGRESS OF PARIS.—The National Horticultural Society of France will hold its tenth Congress in the month of May next, at the same time as its annual horticultural Exhibition. The "Bulletin d'Arboriculture" says the Society has put at the disposal of the organising Commission gold, silver-gilt, silver, and bronze medals for essays on the following subjects:—1, Chlorophyll, considered in its relations to the vigour and hardness of cultivated plants; 2, capillarity in its relations with the preparation of the soil; 3, means of hastening the nitrification of substances containing nitrogen, and as a consequence, to render them more promptly assimilable; 4, a study upon the best methods of forcing flowering plants (Lily of the Valley, Lilac, and Roses); 5, the economy of forcing fruits (Strawberries, Grapes, and Peaches); 6, kitchen garden culture of the leading subjects (French Beans and Asparagus); 7, on the utility of a unity of comparison for estimating the divers systems of heating with hot water. For all instructions address the Secretary of the Society, 84, Rue de Grenelle, Paris.

— BOUGAINVILLEA GLABRA AS A GREENHOUSE CLIMBER.—This beautiful summer-flowering plant is more often found growing in a higher temperature than that usually maintained in greenhouses. Anyone observing the colour of the flowers when in a stove, and also in a greenhouse, will perceive how much richer are those on plants in the lower temperature. Trained under the roof, and treated as a Vine would be as regards pruning, is the best way of growing the plant in a greenhouse. It should be planted out in a wide, well-drained border. The growth will be vigorous, and if not shaded will be well ripened each season. If the young shoots be too close together the weaker may be cut away early in the season, the others allowed to grow unchecked, and to hang down; they will flower profusely for nearly four months. When planted in a large house, and intermixed with Plumbago capensis, P. capensis alba and Heliotrope, the effect is charming. A mixture of good loam and leaf mould, with a little peat and charcoal added, will answer well. During the summer abundance of water may be given, and when the plants are at rest the border must not be allowed to get too dry.—G. GARNER.

— RED SPIDER ON GOOSEBERRY BUSHES.—Admitted that last year, because so exceptionally hot and dry, greatly favoured red spider on Gooseberry bushes, yet, so far as a wide experience of market gardens is concerned, I have seldom found this pest giving trouble in this way. Hence, whilst it is advisable to warn growers against possible dangers, I fear that, as in Mr. Hiam's case (page 169), there sometimes gets to be a possibility of such a complaint as insects on the brain, and the community may be led to believe that not only Gooseberries, but other products, can only be grown when extraordinary precautions are taken to check insect development. In the matter of the washing remedy mentioned by Mr. Hiam, I entirely failed to see why cloths should be employed, unless it be to catch the spider when washed from out of the bushes. As the hard syringing is pretty certain to wash out the insects without the use of towels, would it not suffice to destroy them on the ground if the soil beneath each bush be turned over with a fork at once? That would save much trouble from cloth washing and assist the bushes. If, too, before the forking was done, a liberal dusting of soot was given to the soil, the spider would soon be destroyed. After all there are few "insecticides," if one may so employ the term, like ample thinning and liberal cultivation. It is good cultivation for everything, with ample light and air, we have to advise learners. These are the best of preventives for insect and fungoid attacks. Drought and poverty of soil creates numerous ills, whilst good culture renders them incapable of harm. Even the soakings of water resulting from the washings will often do more permanent good than the temporary washing, the effects of which so soon disappear.—A. D.

— DUNDEE HORTICULTURAL ASSOCIATION. — The monthly meeting of this Association was held in the Y.M.C.A. Rooms on Friday evening, Mr. Robert Wilkie (the President) in the chair. A paper was read by Mr. R. Clark, Scotsraig, Fife, the subject chosen being "Horticultural Language: What it Teaches and How to Know it." Mr. Clark being a well-known authority on this subject, there was in consequence a large attendance of members. In the course of an instructive address Mr. Clark said horticultural language, as he understood it, must include the language of all literature of whatever description connected with the science in question. Proceeding, he said the articulation or pronunciation which he adopted differed from that they were usually accustomed to hear, which was that promulgated in "Nicholson's

of the best forms of that beautiful Orchid. He showed a fine specimen of *Cœlogyne cristata*, nearly a yard across, with between 200 and 300 flowers on it. John Machar, Corona, Broughty Ferry, exhibited a fine plant of *Cypripedium Rothschildianum*. Both these exhibits were awarded a cultural certificate. Some huge blooms of *Callas* from Mr. Richard Cairns, Balruddery, a Tulip from Mr. Thos. Butchart, Elmslea, with several well developed flowers on one stem. An exhibition stand for Leeks was shown by Mr. A. Cameron, Foggyley, Lochee, was considered a great improvement upon the old system of showing them, and will likely be adopted at the shows this autumn. A vote of thanks to the exhibitor and the chairman brought a very successful meeting to a close.—J. M. C.



FIG. 31.—BEGONIA GLOIRE DE LORRAINE.

Dictionary of Gardening." This system was sure to come fast into use, as it had been adopted in the Edinburgh University and other places of learning just at hand, and the sooner they educated themselves in it the better, if they were to keep pace with the advancement of education in our day. Mr. Clark went on to give the correct pronunciation of many well-known plants, with their Greek and Latin derivations and meanings, and impressed upon his audience the necessity of studying the distinct articulation of plant names and knowing their meanings. After discussion, he was awarded a hearty vote of thanks for his instructive lecture. The exhibits at the meeting were of great merit, and consisted of a group of Orchids and other plants from Mr. Robert Grossart, Binrock, Dundee; it contained grand examples of *Odontoglossum Alexandræ*, with spikes nearly a yard in length, with flowers of great size and purity, representing some

BEGONIA GLOIRE DE LORRAINE.

At a meeting of the Royal Horticultural Society, held in the Drill Hall, James Street, Westminster, S.W., on October 24th, 1893, Mr. Jennings, gardener to Leopold de Rothchild, Esq., Ascott, Leighton Buzzard, exhibited some exceptionally well-flowered plants of *Begonia Gloire de Lorraine*, and for which a first-class certificate was awarded. From a sketch of one of these the illustration (fig. 31) has been prepared. Mr. Jennings writes regarding this charming variety: "I purchased *B. Gloire de Lorraine* in February 1893, and in June propagated the plants exhibited, and grew them in a temperature 55° to 60°. The soil I used was one part loam, two parts peat and leaf mould, and sand. It is a fibrous rooted kind and one of the best winter blooming Begonias I have grown. It does not drop its blooms like other varieties."



ROSE SHOW FIXTURES IN 1894.

- June 26th (Tuesday) Farningham.
 " 27th (Wednesday).—Windsor (N.R.S.).
 " 28th (Thursday).—Eltham and Sutton.
 " 30th (Saturday).—Sittingbourne.
 July 4th (Wednesday).—Croydon and Reigate.
 " 5th (Thursday).—Hereford and Norwich.
 " 7th (Saturday).—Crystal Palace (N.R.S.).
 " 10th (Tuesday).—Gloucester and Wolverhampton.*
 " 11th (Wednesday).—Hitchin.
 " 12th (Thursday).—Bath, Harleston, Woodbridge, and Worksop.
 " 17th (Tuesday).—Helensburgh.
 " 19th (Thursday).—Halifax (N.R.S.).
 " 21st (Saturday).—Manchester.

* A Show lasting three days.

Any dates of Rose shows, or of other horticultural exhibitions where Roses form a leading feature, not named above, I shall be glad to receive as soon as fixed for insertion in future lists.—EDWARD MAWLEY, *Rosebank, Berkhamsted, Herts.*

THE SUTTON ROSE SHOW.

THE attention of the Sutton Rose Show Society's Committee having been called to the fact the date fixed for their meeting clashed with the N.R.S. meeting at Windsor, and also with that of the Farningham Rose Society, have promptly altered their date to the 28th June. For this consideration to rosarians they deserve our thanks and a successful meeting, and it is to be hoped they will be rewarded.—C. J. G.

THE CLASHING OF ROSE MEETINGS.

I KNOW how very difficult it is to arrange Rose fixtures without clashing, but surely, as Mr. Grahame has called attention (page 162) to it thus early, the Secretaries of Croydon and Reigate might endeavour, if possible, to make some other arrangement; also it will be calamitous for "Sutton," as of course we shall all go to the "National." I have exhibited for many years at each of the above, and I am sure any brother rosarians will join with me in the hope that some alteration may be made.—A. SLAUGHTER.

EARLINESS OF ROSE GROWTH.

REFERRING to Mr. Machin's note upon this (page 162), I have seen much Rose growth south of London equally forward with the piece of Madame Bérard he mentions. L'Idéal, Pauline Labonté, Sombreuil, Kaiserin Frederich, Auguste Mic, and the Chinas are particularly forward. Several of the older varieties, such as Homère, Elic Morel, Baronne Prévost, and others are more forward in growth than the majority of newer introductions. At present there is every appearance of our cutting Roses as early as last year, which was about the middle of April. Of course, this is upon a warm wall, and in a sheltered portion of a southern county. This premature growth will induce early pruning—in fact, a large amount of pruning has been done, but I do not believe in pushing the lower eyes too soon, and would rather leave the terminal growths as an outlet for the extra early rise of sap. I believe that much of this is attributable to the splendid ripening of late growth last year, the whole being in good condition, and so responding even too freely to the present mild season.—ROSARIAN.

PRUNING CLIMBING ROSES.

THESE are usually most appreciated when in bloom early or before any in the open, and by attending at once to the pruning, tying in or nailing, this will be all in favour of early and abundant flowering. Not pruned at all they soon become unsightly, and of comparatively little value. All must not be treated alike. Hard pruning in the case of such strong growing Noisettes as Maréchal Niel, Bouquet d'Or, W. A. Richardson, L'Idéal, and Aimée Vibert, would lead to the formation of still ranker growth, and but few blooms. Thin out the spray, cut away all growth badly placed for training, and only remove the unripened ends prior to securing to the walls and trellises. Strong young trees of Gloire de Dijon and Madame Bérard should not be severely pruned, and may well be treated similarly to the Noisettes, but older trees should be freely pruned in order to keep up their vigour. Other Teas, as a rule, ought to be pruned moderately hard, as they cannot well be grown too strongly, the rankest growths branching and blooming freely. Remove much of the spray, and cut back all shoots reserved to within three or four joints of their starting point last spring other than those required for furnishing blank space. Furnishing growths to be shortened to about two-thirds of their length. If Hybrid Perpetuals are grown against walls and pillars prune as advised in the case of Teas. Banksians flower more abundantly from lengths of medium sized to small growth and shortened spray, but some of the stronger shoots may well be reserved, and laid to nearly their full length with a view to keeping them in full vigour.—SOMERSET.

NORTH AND SOUTH.

THE altered arrangements as to the exhibitions of the National Rose Society seem to have fluttered some of our rosarians. For the last few years the Society has held three exhibitions—one for Teas and Noisettes in the Drill Hall, Westminster, at the end of June; the great metropolitan exhibition at the Crystal Palace on the first Saturday in July; and a provincial exhibition, which, though not actually a northern one, was so arranged as to locality and date as best to suit northern growers. The present year witnesses, as your readers already know, a great change in this respect. Three exhibitions are still to be held; the metropolitan still continues as before, but in lieu of the one in the Drill Hall a southern exhibition has been established, and in lieu of the provincial one a northern exhibition, and herein comes the difficulty—what is to be considered north and what south? The curious state of mind upon this subject may be illustrated by the fact that one eminent rosarian proposes to make Peterborough a northern town, while I had a very indignant letter from an amateur in the Isle of Wight protesting against the notion that Windsor was to be classed as a southern town; you might as well, my correspondent said, place Hertfordshire in the south. It will be thus seen what fanciful lines some are inclined to draw. What, then, would be the true dividing line, and have we any data by which to decide it?

Many years ago there was a strong difference of opinion amongst Pink and Carnation growers as to what constituted the best style of flower. The southern growers were for one full of petals, which the northern called mops, and thought a flower with two or three rows of petals was a type to be aimed at. At that time the Trent was considered the most suitable boundary dividing the northern and southern men. Then, again, we have in the cricket season a game played between north and south; I do not know whether they do define a boundary (I suppose they do), but we all know that the champion cricketer, W. G. Grace, always played for the south, and he hails from Gloucestershire. I think therefore that the dividing line suggested by one of our local secretaries in the west might be fairly taken upon the whole as suited for all purposes—namely, one drawn through Birmingham across England; and in truth the Committee of the N.R.S. have practically come to this conclusion, for they have agreed to recommend that the southern Exhibition should be held at Gloucester in 1895, and the northern at Derby. The date is after all probably of more importance to exhibitors from the locality. In these days of rapid railway communication the north and south are equally open to exhibitors, and whether the Show be in the east or west, north or south, they can manage to put in an appearance.

THE CLASHING OF SHOWS.

While writing on this subject I may refer to a letter from Mr. C. J. Grahame, which appeared on page 162, relative to the clashing of Rose shows, in which he suggests the assembling of a conference of the managers of various Rose societies to see whether this could not be prevented. He is evidently unaware that this was done some years ago—such a conference was summoned, but resulted in a ghastly failure. The parallelism of the cricket clubs is quite beside the mark. There are at least four months during which cricket can be played and about three weeks during which Rose shows can be held. It is easy to arrange for some twenty matches which are to run over four months, but it is not so easy to arrange for the same number of Rose shows in three weeks. It was found, moreover, that local circumstances had a powerful influence in the fixtures; Wednesday and Thursday in the week are the favourite days, because they are what are called early closing days, and hence the managers of the societies are anxious to choose one of those days for their exhibition, and at the conference above named when an alteration was suggested in some cases it was met by a dogged "*non possumus*." This is not to be wondered at, because so much of the well-being of the society depends on the gate money. I think it is an unfortunate thing, however, that a newly started society interferes with the arrangements of a long established one. This has been done in the case of the newly revived Reigate Show. Croydon has for a number of years, I believe, held its exhibitions on the same date, and Reigate when I knew it used always to hold its shows on a Saturday, and considering how many of the residents there are connected with the City I should have thought it would have been desirable to have kept to that day. But upon the whole I am inclined to think that very little can be done in preventing the clashing of Rose shows, and that we must put up with the inconvenience.

THE QUEEN'S PRIZE FOR ROSES.

Just a few words with regard to the once much talked of Queen's prize. I find many people speaking and writing about it as if it had some similarity to the Queen's prize offered at the meeting of the National Rifle Association; it bears no likeness to it whatever, it is simply given because the show is held at Windsor, and will not be given another year. Her Majesty, on the same principle, because of her residence at Osborne, gives a gold medal at the Isle of Wight Show each year. In throwing it open to all amateurs, whether large or small, the Committee of the N.R.S. have, I think, acted wisely in following out the wishes of the local authorities, and I feel tolerably certain that the trade growers, with that generosity of feeling which characterises them, would not wish to see the coveted prize pass out of the ranks of amateurs. It is a prize in which the small grower will have as good a chance of success as the larger one, for during my long experience I have seen many a stand of twelve which would have successfully

competed with any twelve taken out of the larger classes. Big battalions do count for a good deal, but care and attention will oftentimes overmatch them. I have known several exhibitors who have launched out into larger contests and coveted greater triumphs, but who have never shown so well as they did when they had only a few hundred plants to deal with and were able to devote more attention to individual blooms, the shading and watering being more exact and careful than can be the case where a larger number of plants are grown; so that I think on the whole there will be a fair field and no favour.—D., Deal.

GALVANISED WIRE FOR FRUIT TREES.

IN reply to the inquiry of "D. J. H." (page 164) I beg to say that all trellises made of galvanised wire, and to which it is intended to train trees of the Peach, Nectarine, Cherry, Vine, or any other plant, including Melons, Tomatoes, and Cucumbers, should be given three or four coats of good white or stone-coloured paint before the shoots and branches are allowed to come in contact with the wires, otherwise injury to the shoots may result therefrom. Early last week I wired one of my Peach walls out of doors, putting the wires (galvanised) 6 inches apart along the wall, and gave them four coats of stone-coloured paint before tying the trees thereto. Thus treated no harm can result from the fact of the growths coming in contact with the wires, due allowance being made in the ties for the development of the individual shoots and branches.—H. W. WARD.

IN reply to "D. J. H.," page 164, I have many times seen Peach and Nectarine trees badly injured, and large branches nearly killed by coming in contact with galvanised wire, both in heated and unheated houses and on the open walls. About ten years ago I had to take charge of two large new unheated houses of Peaches and Nectarines mixed, which had been planted the previous winter. It was in the autumn when I went, and on looking over the trees, which, through being planted in new and large borders had grown very rankly, I found many of the young branches gumming badly. This could not have been caused by frost as it was the summer growth, but through the shoots not having room to swell outwards, and so had grown over the wires, which, as "D. J. H." says had seemed to burn them; but he does not say if they were tied or pressing against the wires.

I have seen them gum on painted trellises, but not so badly, and have always thought there must be something in the galvanised wire, especially when new, that was very hurtful to any tree or plant pressing against it. It is always a good plan when tying trees at any time of the year to allow them ample room to grow; and when large branches have to be tied firmly to keep them in position, to place a shred of cloth between the growth and the wire. With the smaller branches, after giving the matting or string a twist round the wire, give it another double twist before tying, so that the last will be between the branch and the wire; this, if not tied too tightly, will prevent bruising or gumming. I should say "the little balls hanging like drops of frozen water" is the gum or sap from the wounds.

What it is in or on the galvanised wire that causes the "burns" I do not know, so should be glad if someone could inform me; but I think all such wire when new, if possible, should be painted.—A SINGLE-HANDED GARDENER.

WHETHER the action of galvanised wire when coming in contact with the branches of fruit trees is different under glass, as compared to its effect on trees growing against the open wall, I know not. I only remember one case of injury occurring through contact, and that was to the flower stem of an Amaryllis growing beside the wire in a Cucumber house. Where the stem pressed against the wire an injurious mark was found; directly the plant was moved the decay, which had previously set in, ceased. All the wires in our fruit houses are painted, but those upon the walls outside are not, and I have never been able to trace a gummed or decaying branch to the presence of galvanised wire. Especially are the Peach and Nectarine trees free from injury, therefore I cannot think ill effects can accrue from its use, certainly not out of doors. It is, however, a safe plan to give the wires inside a coat of white paint; no risk is then run of injury—first to the bark, and afterwards to the branch itself.—E. M.

[Galvanised wire varies in character, and it is more liable to injure growth in the atmosphere near large towns than in the purer air of country districts.]

EXHIBITING HARDY FLOWERS.

MR. WILLIAMS' contribution (page 161) on this subject shows how difficult it is to arrive at a satisfactory wording that shall render classes for hardy flowers free from all doubt or difficulty. It is satisfactory to find that 2-inch tubes are generally acceptable—that is, something that may help to ensure uniformity in the dimensions of the bunches shown, as no doubt every exhibitor would pretty well fill his tube with stems. If in so doing he preferred to crowd them unduly, his bunch would suffer in consequence; that, however, would be his look out. A wise exhibitor would prefer to arrange more thinly, so that each spike or truss of flowers be shown to the best advantage. I venture to hold that the proposal to allow so many varieties of one kind in classes—such as four in twenty-four, six in thirty-six, or eight in forty-eight—are too many, and would lead to the introduction of certain fewer showy flowers rather than a liberal selection of varied kinds. Even in forty-eight surely

four bunches of any kind, let the sorts be ever so distinct, is enough otherwise we may see Phloxes, Lilies, Sunflowers, Gladioli, and Delphiniums dominating all other kinds. Mr. Williams' suggestion, that an exhibitor might overdo varieties to his own humiliation, shows that he perceives the suggested scale of varieties of any one kind admissible in a class to be rather too liberal. The difficulty that "hardy flowers" would include Roses and flowering shrubs is not yet overcome. Were "hardy flowers, excluding Roses and shrubs," employed it would do what I should like to see—admit hardy biennials. The word "herbaceous" rather applies to plants that are not evergreen, and therefore strictly read—Pinks and Carnations are excluded. It is a term best omitted, especially that bulbs, many of which are not perennials, but annuals, are admitted. Hardy border flowers when well grown are such beautiful objects that we may well desire to see them universally exhibited.—A. D.

WITH every desire to support Mr. Williams (page 161) in his efforts, I did not respond to his request in the Journal that growers of herbaceous plants should send to the office lists of those they considered the most suitable for exhibition from the end of June onwards. For one thing the margin of time was too wide, and for another the varieties of soil and climate make a list suitable for one garden quite unsuitable for another. My opinion is quite confirmed by the list Mr. Williams has compiled with so much labour, and by the difficulty I felt in responding to an application from an esteemed private correspondent who desired a similar list for a specified season for his own garden, which I had seen. I was glad to furnish this list, but I hope the result is more satisfactory to my friend than it was to myself. Your correspondent will, I trust, not think me too critical in the remarks I make upon the list given.

Several very desirable plants are omitted, and in some cases more recent varieties, which would undoubtedly count several points, are left out. In the first category one might name a considerable number of plants, but two or three will suffice by way of example. We have no mention of *Eryngium alpinum*, *Rudbeckia* (*Echinacea*) *purpurea*, the *Helenium*, *Bocconia cordata*, or *Platycodon Mariesi*. Then *Coreopsis lanceolata* might be omitted, so as to include the superior variety *monstrosa*. The words within brackets after "Delphiniums (especially *Belladonna*)" might be omitted, as several of the newer English and French varieties are of superior form and of equally good colour. The variety of *Heuchera sanguinea* named *splendens* should be substituted for the type, and, unless for the "blue" colour, which is sometimes useful in giving variety to a stand, *Scabiosa caucasica alba* might be substituted for the type as being of more recent introduction. Then is not *Lychnis chalcedonica* fl.-pl. intended, and not the single form?

Unless varieties of *Gladiolus gandavensis*, *G. purpureo-auratus*, or *G. Saundersi* are expressly excluded by the schedule, they would give a much better effect, and are quite as easily grown as *G. Colvillei* and *The Bride*. While *Potentillas* and *Delphiniums* are included, *Phloxes* find no place. Some of the plants named are also such as are not to be recommended for every garden. Thus the variety of *Achillea ptarmica* named *The Pearl* is not so hardy as the ordinary form. *Campanula persicifolia alba grandiflora*, although certainly finer than the type, is not a good grower in many gardens, and *C. persicifolia alba* fl.-pl. would be a good "stand by" in addition to it. *Gaillardias*, too, are not hardy enough to recommend to everyone. But one might go on *ad infinitum* at this thankless task, and I should recommend those desirous of exhibiting to study the names of the flowers given in the *Journal* as in the prize stands at the various shows, to study the plants themselves, and to keep themselves well posted up in the new introductions, which are certain to tell in a close competition.

The suggestion as to limiting the size of stands would certainly be convenient for the managers of the shows, but this would not put a stop to the errors of judges causing the grievance complained of by one correspondent, who often finds "immense bunches with poor variety, lacking colour and rarity, receiving a higher award than a stand of smaller bunches, but having greater variety, colour, and quality." The second correspondent whose letter is quoted seems to be quite satisfied on this head. If the judge knows his work it is of very little consequence whether the number of varieties in a stand is limited or not, as too many varieties of one flower would certainly tell against the exhibit.

The Editorial note on the meaning of "hardy flowers" leads me to remark that I do not think we can improve on last year's proposed definition—"Hardy border flowers, shrubs, and annuals excluded." Although we may agree to differ on some of these points, this discussion can do no harm, but good, and thanks are due to your correspondent for ventilating the subject. *Cephalonia alpina* in the list on page 152 is doubtless a printer's error for *Cephalaria alpina*.—S. ARNOTT.

YES, Mr. Editor, as you remarked (page 162) in last week's Journal, Roses may be included among the "hardy flowers," and there are at many provincial shows classes in which Roses, Carnations, and Fuchsias are admitted; but surely any fairly intelligent committee, if they wished to exclude such flowers, would word their schedule, "hardy flowers, to include only herbaceous and bulbous kinds."—J. A. W.

[The fact is that intelligent committees have not done what is suggested, and exhibitors have been left to do the best they could under the circumstances. Roses have often been seen in stands of "hardy herbaceous plants," and some stands have been disqualified, but not all, according to the idiosyncracies of the judges.]



HIGHGATE AND DISTRICT CHRYSANTHEMUM SOCIETY.

THE annual general meeting of the above Society was held on the 28th ultimo, R. Gaskell, Esq., the President, presiding. The draft report and balance sheet were read and adopted, also votes of thanks passed to the President, Vice-Presidents and subscribers. The election of officers was then proceeded with, P. Hart, Esq., being elected President; Mr. McKerchar, Treasurer, and Mr. W. E. Boyce, Archway Road, Highgate, Secretary. The meeting closed with a cordial vote of thanks to the Chairman for presiding.

STOPPING NEW CHRYSANTHEMUMS FOR TIMING BUDS.

I AM much surprised that there is not more advice given through the medium of your valuable paper upon this very important point in Chrysanthemum culture. Many persons like myself are anxiously looking out for some reliable information as to the most suitable time for stopping the plants and taking the buds. Would the successful cultivators who had the privilege of growing some of the new varieties last season kindly give us their experience as to the treatment and peculiarities, if any, of the undermentioned varieties, also any others that may require special cultivation? for now is the time that such knowledge should be forthcoming, which would certainly be most valuable to the majority of Chrysanthemum growers. Baron Hirsch, Robert Owen, William Seward, Waban, Mdle. Thérèse Rey, G. W. Childs, Lord Brooke, Charles Blick, Golden Wedding, *Enfant des Deux Mondes*, Florence Davis, Col. W. B. Smith, Miss Dorothy Shea, and William Tricker.—G. W. R.

MRS. ALPHEUS HARDY.

THE cause of this variety standing so low in the selected lists is the difficulty cultivators find in producing satisfactory blooms, owing to its delicate constitution. Where one grower succeeds there are scores who entirely fail to grow it. In the former case the suitability of the soil to its requirements may have more to do with its success than is generally supposed. In the first place, it is shy in producing cuttings, it is weakly at the best of times, very subject to attacks of mildew and insect pests, and, worse than all, the flowers are so liable to premature decay about their base before the centre of the blooms expand fully. Again, the novelty of its hirsute appendage has worn off somewhat, now that it has become quite common in so many varieties.

I cannot agree with Mr. Rainton (page 93) as to the extreme whiteness of its florets, for, as a rule, it is inclined to be rather "dingy" in its colour, although in some instances it is different. When we consider also the main object of the election—information for beginners—I am not surprised to find Mrs. A. Hardy occupying so low a place.

In my opinion the hirsute varieties as a whole are not destined to occupy a foremost position. We want something more than the novelty of a few hairs upon the reverse side of the florets, for they can hardly be called useful, and that is a point not to be lost sight of even in exhibition varieties of Chrysanthemums.—E. MOLYNEUX.

CHRYSANTHEMUMING.

THE note by our facetious friend, "E. K., Dublin" (page 168), brings to my memory two amusing anecdotes that were related to me when in Ireland in November last, and which brought some trouble and inconvenience to the person implicated, who was an enthusiastic amateur. He had so crowded his small greenhouse with plants that he had the greatest difficulty in getting inside to attend to them. One night, perched on the top of some tall steps searching for earwigs, the steps fell, precipitating him to the bottom amongst the pots and extinguishing the light, thus creating such a "rumpus" that he was so frightened as to be unable to find his way out, commencing to shout "murder" as only an Irishman can.

The same individual appears to have had extremely bad luck in his midnight peregrinations. Having had some exceptionally tall plants bearing extra fine blooms almost touching the glass, his enthusiasm carried him so far that he mounted on to the top of the roof about twelve o'clock one night to better inspect the blooms from above, and whilst stealthily crawling along the ridge he was observed by his neighbour—an elderly female—who suspected him of felonious intent, as the local show was near at hand; so suddenly popped her head out of the window overlooking the greenhouse and commenced to belabour our enthusiast with both tongue and the proverbial blackthorn, that our friend in his anxiety to rid himself of the unpleasant visitation, had the misfortune to slip through the glass, smashing his adored blooms in the descent. "Moral," said he, "never go 'Mum admiring by lamp light at twelve o'clock at night again on the roof of your greenhouse, and within easy distance of a real 'Irish blackthorn.'"

So strongly smitten with the fever was this individual, and hearing that oyster shells were good for mixing with the compost and for drainage, he quickly made himself acquainted with every person in the neighbourhood for miles around who was in the habit of eating oysters.—E. M.

ROOTING CHRYSANTHEMUM CUTTINGS AND STOPPING THE PLANTS.

I AM pleased to see these matters receiving the attention they should in the pages of the *Journal of Horticulture*, especially at the present opportune time. I have long held the opinion that spring-rooted plants of the Queen family are thoroughly satisfactory in some localities and seasons, because the crown buds show much later, and moreover the shoots are less liable to get over-ripened as they sometimes do in hot seasons. My experience with the Queen family is that they invariably produce the finest blooms when the foliage is maintained in full vigour till the blooms are fully expanded. As Mr. Garnett (page 150) points out, the absence of good examples of this family from early shows during the past season was generally apparent, and even at later ones they were not seen in really good form; while on the other hand Japanese flowers were perhaps the finest on record. This, I think, ought to go a long way towards proving that over-ripened wood is a condition to be guarded against.

In the southern counties cuttings rooted as late as the end of February would frequently produce crown buds too early, but in the midlands I believe cuttings rooted in January or February produce the best flowers. In the south growers must depend principally on terminal buds, and unless the plants are rooted early these show a trifle too late, and if not grown exceptionally well the flowers resulting therefrom lack size and breadth of floret. Against this drawback, however, we have to place this advantage—that terminal buds may generally be depended upon not to produce rough and ill-formed flowers.

It seems to me that the best way out of the difficulty is for southern growers to insert their cuttings as soon as strong ones can be obtained and rely on terminal buds, while growers farther north may with advantage defer inserting their cuttings till January or February and trust to crown buds. The opinion of numerous Chrysanthemum growers on this point would prove highly instructive.—H. DUNKIN.

NATIONAL CHRYSANTHEMUM SOCIETY.

A MEETING of the General Committee of this Society was held on Tuesday last, Mr. R. Ballantine occupying the chair. The minutes having been read and confirmed, the Secretary announced he had received a letter from Sir Edwin Saunders, thanking the Society for re-electing him as their President. It was also mentioned that he would offer a piece of plate, to be called the President's prize, for competition at the November Show. One-third of the Floral Committee retiring this year having to be re-elected or replaced resulted in the following election:—Messrs. Beckett, Bevan, Owen, Lees, Withy, Geo. Stevens, and Mease. The competition was keen, there being twelve candidates. Mr. W. H. Fowler, J.P., was re-appointed Chairman of the Floral Committee. Considerable discussion ensued upon the date of the floral meeting in November, and, after several propositions had been discussed, it was resolved to meet on the second day of the November Show at one o'clock. The election of the Catalogue Committee was then proceeded with, Messrs. Fowler, Taylor, Jukes, H. J. Jones, and Harman Payne being appointed. A discussion thereupon arose as to the necessity for a revision of the Society's catalogue. Some thought an entirely new issue should be prepared, while others considered a supplement might do. It was finally arranged that this and other subjects arising out of it should be referred to a small sub-committee to report upon at a future meeting.

There were several proposals brought forward that involved a change of rules, and which must therefore be deferred until an annual meeting. Of these the question of advantages offered to guinea and half-guinea subscribers was the most important, there appearing also to be some desire to institute a degree of honorary Fellow for special services rendered in connection with Chrysanthemum work at home and abroad, and several other items which will now have to stand over until this time next year. Several new members were elected, and the Tooting and Merton Horticultural Society admitted in affiliation.

Several complimentary votes of thanks brought the meeting to a close, which was a rather later one than usual.

THE ROYAL GARDENERS' ORPHAN FUND.

MR. A. DEAN (page 139) has done well to call attention to the unpardonable neglect on the part of a very large number of gardeners in subscribing to the above Fund. I think his suggestion of "crediting a certain number of votes to subscribers" is excellent, and would induce a wider support from gardeners. It is but right and fair that the families of those gardeners who have in their lifetime made some sacrifice in order to subscribe towards the Fund should have the preference of those who through selfishness or heartlessness are unaffected by the urgent appeals of the needy. If he is a gardener there can be no excuse for neglecting to contribute the small sum of 5s. a year, because even in "these bad times" he can command a salary that will enable him to do so with a little forethought and management. Not until gardeners do their level best can they reasonably expect outside help in the support of a Fund that is managed upon lines that are impartial and most economical for their special benefit.

In "The Horticultural Directory and Year Book for 1894" there are 4957 gardeners' names published. Those at 5s. each would contribute the handsome sum of £1219 5s. a year, a sum, I venture to say, sufficient to support every orphan under fourteen years of age in the gardening community of the United Kingdom.

I would suggest that the words "father subscriber" or "father non-subscriber" be inserted in all the descriptions of future candidates. The fact that a candidate's father was a subscriber would at once count as five points out of fifteen with me, and would act more strongly in securing my vote than any quantity of "canvassing papers." This, on the surface, may savour of selfishness and want of feeling, because in neither case can the children have influenced the action of the father; but one cannot help recognising merit. Besides, as above shown, if every gardener acted up to his privilege and duty in the matter very few applicants need be turned away unblessed. There is no more lamentable sight in this world than a widowed mother struggling to support herself and a small family, and the society which seeks to alleviate such unavoidable calamities is worthy of consideration and support from all whom it seeks to benefit.—J. H. W., *Leicester Frith*.

IRIS ROSENBACHIANA.

AN excellent form of this Iris has been forwarded to us by a correspondent, who requests the name and a correct description, which is as follows:—A dwarf early flowering Iris, only a few inches high, and consequently well adapted for culture in pots, though it is said to be quite hardy. The flowers are slightly larger than *I. reticulata*, the petaloid stigmas and "standards" mauve, the "falls" each having a bright central orange ridge, are tipped with deep purple. The flowers vary greatly in colour, however, as some are very pale, and in others quite a dark bluish purple hue runs through the whole flower. Seedlings of most Irises present similar variations in colours without artificial crossing having been effected.

CLEMATISES.

THESE rank among the most gorgeous of trailing plants. They are particularly well adapted for covering archways, porch fronts, for festooning house fronts, and for rambling over old tree stumps and rockeries. Now is a good time to plant. Strong plants well established in pots are usually supplied by nurserymen, and these should have a good depth of fairly rich loamy compost to start in, planting in poor soil being a great mistake. The roots would take more readily and the top-growth be stronger accordingly if the former are carefully loosened so as to spread well out into the new soil at once. Plant rather firmly and mulch with short manure.

Clematises must not be neglected at this time of year, failing to attend to the pruning soon resulting in a confused mass of growth, nothing short of cutting down to near the ground restoring them to something like a presentable condition.

The early summer flowering kinds, such as *montana*, *azurea grandiflora*, *Albert Victor*, and *Lady Londesborough*, flower on the ripened wood formed of the preceding year, and these should only be thinned out, having all dead and weakly growth removed and reserved growths lightly shortened.

The late summer and autumn flowering section, which comprises *Jackmanni*, *Lady D. Nevill*, *lanuginosa*, *Robert Hanbury*, *velutina purpurea*, and *Gipsy Queen* flower on the current year's growth or quite young wood, and these, therefore, should be freely shortened. Better cut back to within three or four joints of last season's starting point, and have a few extra strong growths which will produce large flowers in profusion than to be very sparing with the knife and have many more weakly growths accordingly.—M. H.

THE MARKET GARDENING INDUSTRY.

A REVIEW.

A CORRESPONDENT sends us the following cutting from the "Cornish Telegraph," and we think many of the observations and suggestions therein merit the attention of growers and vendors of produce generally:—

The market gardening industry a few years ago was undoubtedly one of the most important and profitable pursuits that the agriculturists of West Cornwall had ever followed. At that time the area allotted to this particular branch of agriculture was principally confined to the semicircular slope facing Mount's Bay and its sheltered position, its southern aspect and its temperate climate, particularly during the winter season, gave many natural advantages to the locality, and especially fitted it for the successful cultivation of those crops—early Potatoes and Broccoli—which the district has produced for so many years in regular succession. It was not uncommon in those days for the gardeners to receive £3 and £4 per cwt. for their first consignments of early Potatoes, and 20s. per crate for Broccoli, and, as the land produced both of these crops every year, it can be readily believed that market gardening was then a very remunerative occupation. The prosperity, however, was of short duration, for others who had eligible sites, though further inland, began also to cultivate the Potato and Broccoli, so that the area steadily increased until there is scarcely a parish in the western part which does not produce those vegetables in greater or less quantities every year.

The result of the increased cultivation has been what anyone might have naturally expected—lower prices, although it must not be supposed that the low prices returned for the last few years were entirely due to

this cause. There are others, and amongst them we may mention that these crops have been not only more extensively cultivated of late years in other parts of this country, but in foreign countries as well, and the growers at home and abroad have become active competitors for the trade which at one time was largely confined to West Cornwall. The gardeners, however, have gone on year after year hoping for better prices "next season," which, unfortunately, have not been realised, nor is there any real ground that we can see for hoping that prices will ever again reach the height they did "in the halcyon days of yore." It is worse than useless for them to be always looking backward and sighing for the "good old times" of ten or twenty years ago, while the folly of continually grumbling because "foreigners" can land their produce in this country duty free is too apparent to be controverted. We know the price of market gardening produce has steadily declined for the past few years, although the cost of production has remained about the same, and we can fully sympathise with the gardeners, many of whom



FIG. 32.—IRIS ROSENBACHIANA.

are in circumstances not to be envied, but it is no good looking backward, nor is it any better for them to deceive themselves by following the "Jack o'lantern" of protection.

It is a well known fact in these days of keen competition that the best and most wholesome produce, whether grown at home or abroad, commands the best prices, and there are few people, in spite of all their patriotic pretensions, who are willing to pay the best price for home productions of inferior quality when better foreign articles can be had for the same money. That being so, it should be the duty of every producer to see that he sends not only "good stuff" as represented to the markets, but that it should be carefully sorted and packed so as to arrive in a sound condition. We regret to state that, with a few exceptions, this has not been the rule in the past. Foreigners, however, are well aware of the importance of attending to these little details, and vegetables from France and Italy arrive in our markets in a better condition than those sent from Cornwall. While one sells readily at good prices the other is often a drug in the market. Experience has not yet taught our gardeners the importance of sending their goods to market in the best possible condition, and if they were so inclined they might take a lesson from the "foreigner" which would be to their advantage.

In the Potato season the first consignment from Cornwall generally breaks the market, and it is not unusual for prices to drop nearly fifty per cent. in the second week. And is it any wonder? The Potatoes, which are immaturity drawn, arrive in the market ragged,

often dirty, and always very irregular in size. On the other hand Jersey Potatoes are firm, clean, and of a more uniform size. Their appearance alone would induce purchasers to give a penny per lb. more for them than for the others, and that penny makes all the difference between the grower's profit and loss. There is another piece of folly, not to use a stronger term, to which our gardeners have been addicted for many years. It is too old to deceive anyone, and has probably done the trade great injury, yet they continue to put "toppers" on their baskets. Suppose they try the other plan next season, and pack their baskets fairly throughout. It will not do the growers any harm, and it might do them good. At any rate they will have the satisfaction of knowing that no attempts at deception were practised.

What has been stated respecting the Potato trade will apply with equal force to the Broccoli trade. Our gardeners bitterly complain sometimes against the heavy charges which the railway companies make for carrying their produce to market, and yet one-third of the payments made to those companies every Broccoli season is for carrying either half-empty crates or crates stuffed with leaves which no one wants nor buys. If instead of packing four or five dozen in a crate they were to put in eight or nine dozen the gardeners would find at the end of the season that a considerable amount had been saved. Not only would there be less railway carriage to pay, but less crates, yarn and straw would be required, which, when totalled up, would make a sum not to be despised in these times when profits are reckoned by fractions. There should be also a better and more uniform system adopted by the gardeners as regards packing. Some will send four or five dozen in a crate—and these are the greater number—others will put in seven or eight dozen. But when they both arrive in the open market the prices are regulated more by the small crates than by the large ones, and consequently the man who tries to deal honestly is injured by his less scrupulous neighbour. To remedy this a label should be attached to every crate with the number of Broccoli it contains. Hundreds of crates have been sent away again this season which have not returned a penny to the growers, and in some instances they have been out of pocket on their transactions and have had to send money to pay cost of carriage. It does not require far-fetched arguments to explain the reason why prices have gone down this season to such an unremunerative figure. It is plain and palpable, and "he who runs may read." There are, however, some gardeners who believe in the maxim that "Honesty is the best policy," and who are not always trying to "do" their customers. Their goods can always be depended on, and even this season they have had 8s. per crate returned when some of their neighbours at the same time had only 1½d. To restore lost confidence, to recover trade, and to increase the business all should act as the few are doing—pay more attention to the quality of their goods, as well as to the sorting and packing.

GARDENERS' ACQUISITIONS.

I HEARTILY commend "W. P. W.'s" reflections (page 123) to the careful consideration of young gardeners. The points raised are of the greatest moment to those who, like myself, have often lingered on the brink of uncertainty waiting for an inspiration to guide me on the uncertain road, but can now turn with renewed energy and a settled purpose.

Natural history in its broadest sense has a fascinating charm to gardeners; it is a wonderful study, and often amusing to read the speculations of our forefathers as to the cause and effect of the many diseases and peculiarities which vegetation was in their time (as in ours) subject to. They looked with a mysterious and superstitious air upon many things caused by insects. We should ridicule the writer who, on seeing a gall growing upon the Oak or other tree, prophesied war, pestilence, or famine, according to the insect secreted therein without visible means of ingress. No one would wish for a return of this unscientific age when "Nature and Nature's laws lay hid in night." We may truthfully say Darwin, Lubbock, Huxley, with many other learned men, have with the light of science compelled Nature to reveal her secrets and brought them within reach of all.

Science in agriculture and horticulture is a necessity in these days; at the same time it behoves us to keep on the alert, and not allow ourselves to be carried away by mere theoretical teaching, *i.e.*, teaching unsupported by proof. And how are we to distinguish between mere theoretical teaching and the true scientific facts if we are totally unacquainted with what constitutes proof? Practical knowledge is essential in the training of all who aspire to the management of gardens, but science combined with practical knowledge enables us to readily comprehend what practice alone cannot clearly explain; therefore I would say to all who wish to make themselves efficient, Investigate vegetation, soil, and atmosphere, and most assuredly this will create interest and afford pleasure, but do not be carried away by anything or everything which savours only of science. We must bear in mind that knowledge gained by observation is the most powerful. Reading and study often make a man appear more competent than is actually the case. Read not to contradict and confute, as Lord Bacon wisely wrote, but weigh and consider what you do read. "Some books (like articles) are to be tasted, others swallowed, and some few to be chewed and digested."

I am pleased to see that shorthand does not occupy a very prominent position in "W. P. W.'s" selections. Too much weight has from time to time been placed upon this art being of such invaluable

benefit to young gardeners. I, like many others, joined the ranks of shorthand pupils, but cannot claim to be an expert in the art, for the reason that I could never grasp or realize its wonderful power as a gardener's friend. True, it strengthens the memory and cures indecision, a desideratum truly.

One point in connection with language, trifling as it may appear, is of the utmost importance. Before a young gardener attempts to master the rudiments of French, German, or Latin, let him first ask himself this question:—Do I know my own language thoroughly? Am I thoroughly conversant with the rudiments of the English language? If not, cast aside for a time ambitious intentions of studying foreign languages, and labour with assiduity to understand the principle of our own mother tongue, for by so doing we are better able to appreciate and understand the thoughts and works of our gifted brethren.—F. DUNN.



FRUIT FORCING.

Vines.—*Vine Eyes.*—Those inserted in February will now have rooted, and should as soon as the roots reach the sides of the pots be shifted into 6-inch pots, placing them on slate shelves over the hot-water pipes in preference to plunging them in bottom heat. It is necessary to exercise particular care in watering, as a rather dry condition of the soil favours root formation more than a very wet one, still an adequate supply of moisture is absolutely necessary for the speedy and continued formation of roots. Syringe well amongst the Vines, but not too forcibly. Pinch the laterals at the first leaf, and to each succeeding joint of growth as made. If they are intended to be planted out this season the laterals may be left entire, but pinched Vines form more fibrous roots than those allowed to ramble.

Cut-back Vines.—The canes cut back for fruiting in pots next season will now be fit for shaking out, repotting, or shifting into the fruiting—12-inch pots. If they have been plunged in bottom heat they should be returned to it for a time, especially such as have been shaken out and repotted, 75° to 80° being sufficient, otherwise they are better without the bottom heat. Keep them close and moderately moist until they are established. Train the canes near the glass, as they cannot have too much light, it being important that the growth be solidified as it is made. Turfy loam, rather rough and moderately moist only, with a quart of bonemeal, another of wood ashes, and a pint of soot to every bushel of loam, form a suitable compost for Vines in pots. Clean pots and efficient drainage of clean crocks should always be employed.

Fruiting Vines in Pots.—Those started last November will now have the fruit stoned and taking their last swelling. The Vines, therefore, must not sustain any check through dryness at the roots or want of food. Surface dress with rich material, and if the roots extend beyond the pots feed them with liquid manure. When the Grapes are evenly coloured liquid manure should be withheld, supplying pure water, and only sufficient to preserve the foliage fresh and the fruit plump.

Early Houses.—Early Vines have as a rule made satisfactory progress, especially those with the roots in outside borders with no further protection than sufficed to prevent the soil becoming frozen. In some cases the Vines have started slowly and broken irregularly, a few bunches showing a tendency to blindness, and others twisting and twirling in any but the right direction. Under such circumstances a slight increase of temperature and a reduced supply of moisture for a short time may be beneficial. Thinning the berries should be kept well in hand, commencing as soon as those likely to swell freely can be detected, and as a rule thin well in the interior of the bunches, leaving the berries with room to attain their full size without wedging, and yet so full as not to fall out of shape when placed on a dish. Liquid manure applied to inside borders will materially assist the swelling of the Grapes after having been thinned, but it is best to vary the diet, giving a top-dressing of some approved advertised fertiliser about every three weeks, or the following may be used—bone superphosphate three parts, powdered saltpetre two parts, Thomas' phosphate one part, mixed, using 4 ozs. per square yard, and washing in moderately. A liberal supply of atmospheric moisture is also necessary, and if moderately charged with ammonia it is beneficial to the Vines and inimical to red spider. It may be secured by occasionally sprinkling the border and paths with guano water 1 lb. to twenty gallons of water, or, better still, supply a mulch of sweetened horse droppings a little at a time over the whole border, but too much at once will prejudicially affect the foliage. Sharp winds necessitate care in ventilating, so as to avoid sudden changes of temperature, and thus crippled foliage and rusted Grapes may be avoided. Air should be admitted with great care in such weather, closing early in the afternoon at 85°, allowing an advance of 5°, and from that point the temperature should gradually fall to 65° at night. During the daytime the heat should be maintained at 70° to 75° when the sky is overcast.

Grapes that have passed the stoning process ought to have copious supplies of liquid manure in a tepid state. Avoid the close stopping system until the trellis is evenly covered with foliage, as every leaf

promotes root action, which it is necessary to maintain as active as possible for securing properly swelled berries; but remember that this also depends on the full exposure of every leaf to the light, therefore avoid the least tendency to overcrowding.

Succession Houses.—Disbud and secure the growths as they advance, stopping them two joints beyond the bunch where the space is limited, but where there is space allow a greater extension before stopping. Remove the laterals from the joints below the show of fruit except from the two basal leaves, which may be stopped at the first leaf and one afterwards as produced. The laterals above the fruit may be allowed to make such growths as can have exposure to light without crowding, and then be stopped, keeping them closely pinched afterwards, as well as in the case of those not having room for extension. Remove all superfluous and ill-formed bunches of the free-setting varieties as soon as those most promising for the crop can be determined.

Vines started early in the year will be in flower. A rather dry atmosphere with a free circulation of air and a temperature of 65° to 70° at night and 70° to 75° by day, are conducive to a good set, moderate moisture being maintained by damping the house two or three times a day in bright weather. Any shy setting varieties, such as Muscats, should be kept 5° higher, the flowers being carefully fertilised, taking pollen for the purpose from those varieties that afford it plentifully, such as Black Hamburg, Foster's Seedling, and others.

Late Houses.—Start the Vines intended to afford fruit from August onwards; indeed, Muscats, Alicantes, Lady Downe's, and other late sorts should be encouraged now, as the fruit keeps much better when ripened early in September than when the season is more advanced at the ripening period. It is imperative that Gros Colman and Gros Guillaume be given a long period of growth. No further delay should be made in starting houses of those varieties. Vines, however, which have only been recently pruned are the better for a few weeks' rest to dry the wounds and form the essential callus to prevent bleeding; but this may be prevented by keeping the Vines as cool as possible, so as to cause the sap to recede, and then—that is, when the wounds are quite dry, dress them carefully with best French polish, after which they may be started without fear of a serious loss of sap.

In the case of late Black Hamburgs the Vines may be kept cool, and they will then start naturally next month. Inside borders can be brought into a thoroughly moist condition by the application of water not under 50° in temperature nor exceeding the mean of the house. But avoid needless applications of water, as it only tends to retard root action, and in many cases causes the smaller fibres to decay, and shanking is the consequence. The outside borders are not benefited by protective material after this, but care should be taken to keep the stems of any Vines that are planted outside well wrapped in haybands. The atmosphere will be kept sufficiently moist by damping floors and walls two or three times a day; 50° is a sufficiently high temperature at night, and 65° by day with sun. Depress any young canes to the horizontal line or lower, so as to insure their starting the buds evenly throughout their entire length.

Melons.—The earliest plants are now well advanced, and if stopped when they have extended about two-thirds across the trellis, laterals follow with fruit showing at the second or third joint. To insure a good and prompt setting of the fruit it is necessary to afford a bottom heat of 80° to 85°, and sufficient water only at the roots to prevent flagging. This will arrest growth, and in combination with a rather dry atmosphere, a circulation of warm air passing through the house will favour the production of pollen. When this is ripe, fertilise the pistillate blossoms as they expand every day, and stop the shoots at the same time one joint beyond them. When the fruits commence swelling, earth up the roots by placing warm soil against the sides of the ridges or hillocks. Apply water as required, but avoid a soddened condition of the soil, duly maintaining moisture by sprinkling the paths in the morning and evening, and syringing lightly at closing time in bright weather. If a succession of fruit is required in the same house, deprive some of the plants of the flowers that appear on the first laterals. Stopping those at the first joint will cause the sub-laterals to show fruit, which will be rather later and finer owing to the increased vigour of the plants.

Melons in Pits and Frames.—The plants in these with the shoots trained over the surface of the bed will require similar attention to that advised for Cucumbers as regards liming the beds and adding soil as the plants advance in growth. Train and regulate the shoots, removing every alternate lateral, and apply water sufficiently to maintain a steady growth, always of the same temperature as that of the bed. As soon as successional seedlings are ready plant them out, and pot others as they become large enough. Seed may be sown to provide plants for pits and frames as they become cleared of Radishes or early Potatoes, about five weeks being required to secure strong plants.

Cucumbers.—**Houses.**—The night temperature may be increased to 70°, but 5° lower on cold nights is more favourable, watering more freely and increasing the atmospheric moisture. In the daytime 85° to 90° from sun heat should be allowed, running up to 95° or 100° when the weather is favourable after closing. Thin out the growths once a week, removing the old and superfluous, but not carrying this out excessively at one time. Stop, tic, and otherwise regulate the shoots as required, removing tendrils and male blossoms. Winter-fruited plants may have some of the soil removed with a handfork, disturbing the roots as little as possible. Supply lumpy loam previously warmed, and sprinkle over it a little soot, which is a good stimulant and useful against various pests.

Cucumbers in Frames and Pits.—Beds that have been made up some time will need good linings. Remove as much of the outside as can be spared, and if the heat has not greatly declined it will suffice for the present if one-half of the bed is lined, deferring the remainder until the heat is again on the decline. Let it be applied to the width of about 2 feet. Thin linings are of little use, being soon spent, and sooner require renewal. When the heat is up in the linings see that there is no accumulation of rank steam in the frame, preventing it by ventilation. A good night covering will be necessary to maintain a night temperature of 65° to 70°. Admit a little air at 75°, and permit the temperature to increase to 85° or 90°, closing at 80° to 85°, and so as to advance to 90° or 95°, which it is not advisable to exceed at this early season. Add a little more soil as the roots spread on the surface or protrude through the sides of the hillocks. Attend to training and pegging the shoots, being careful not to overcrowd them. Stop the leading shoots 1 foot from the sides of the frames, and the laterals at one or two joints beyond the show of fruit. In watering do not wet the foliage more than can be helped, and take care that it is of the same temperature as that of the beds. A sowing of seeds may be made to raise plants for growing in pits or frames that have been occupied with Radishes or early Potatoes. In four or five weeks the seedlings are ready for planting, and will come into bearing in about a similar time, affording a supply of fruit during the summer.

THE KITCHEN GARDEN.

Celery.—Celery seed sown very early does not always germinate satisfactorily, this being especially the case when old seed is used. Directly it is seen the first sowings are not likely to yield enough plants sow more seed at once in pans or boxes, taking as much pains with it as with Lobelia or other small flower seeds. A moist rather than a dry heat is necessary to promote germination, and the seedlings should also be kept well away from hot water-pipes. Before the plants become drawn shift the pans or boxes to shelves near to the glass and still in gentle heat. Quite the earliest should, when large enough, be pricked out into other pans or boxes filled with good soil, and be kept growing sturdily in heat.

Carrots and Radishes.—Once commenced there must be no cessation in the supply of either kind. A long succession of tender young roots may certainly be had of the former from a two-light or three-light frame, or enough for a small establishment, but Radishes cannot be had in a similar manner, and successional sowings are essential at fortnightly or rather longer intervals. Sowing Radish seed thickly entails much unnecessary trouble in thinning out, and is a senseless proceeding.

Spring Beds.—Before glass was so cheap and plentiful many gardeners were under the necessity of raising early Carrots, Radishes, Celery, Lettuce, and Cauliflower plants without the aid of a glazed frame, and the practice ought not to be in abeyance at the present day even in many small gardens. What is wanted is a good sized heap of well prepared heating material, this being quite level and, say, from 6 feet to 12 feet long, 4 feet to 6 feet wide, and about 3 feet deep. A sheltered spot ought to be chosen for this bed. Drive tall stout stakes into each corner and along the sides and end, these answering the double purpose of keeping boards 9 inches or so in depth that are needed for enclosing the requisite soil, and also of supporting trebled fish nets, mats, or other protective material that may be used. Surface over the bed with 5 inches or rather more fine light soil. Half of the bed may be devoted to Carrots and Radishes, Nantes Horn being a good early Carrot and fine for exhibition from this same bed in July, while Wood's Frame is still one of the best early Radishes. Sow the former in shallow drills 8 inches apart, and Radishes midway between them, and cover lightly with sifted soil. The best of Celery plants for the winter crop can be raised on such beds; also autumn Cauliflowers, Lettuces, and Brussels Sprouts. The heap of manure may ultimately be dug into the Celery trenches, or might be turned to a good account in the production of early Vegetable Marrows.

Early Turnips.—Where extra good crops of late Turnips were grown last autumn and a portion of the roots duly stored, there will probably be little or no necessity for forcing Turnips this spring. If likely to be scarce before May or June an attempt should be made to forward some under glass. A frame with or without glazed lights, rough protection being substituted for the latter, ought to be placed on a mild firmly built hotbed, faced over with short or old manure; on this place about 6 inches of fine loamy soil, making this somewhat firm. If this is dry give it a gentle watering, and soon after sow seed of Early Milan—the best forcing variety—thinly and broadcast, covering with a little fine soil. An early opportunity must be taken of thinning out the plants to not less than 3 inches apart, after which the thinning may be done, according as the roots are near the size of overgrown Radishes, and therefore large enough for use. There must be no hard forcing or undue coddling, or the bulbing will not take place. Sowing the seed on a warm border, and covering with a shallow glazed frame or only boards and mats, would forward Turnips considerably; while if any are sown quite in the open, the market grower's plan of covering with strawy litter, removing it every morning and replacing every evening, after the plants are above ground answers well, both for Turnips and Radishes.

Sowing Onions.—Last season many of those who delayed sowing their Onion seed till late in March had good cause to regret their decision, the dry weather setting in before the seed had a chance to germinate. Sowing early in March usually answers best, but should not be practised if the ground cannot be got into a free-working condition, as in this case it had better be delayed till it can—even if this means

the end of the month. Onions should have a freely manured deeply dug, thoroughly well pulverised breadth of ground given up to them—a quick yet sturdy growth being imperative. Merely reducing the surface to a fine state is not sufficient. The lumps underneath should also be broken down. After thus forking over the ground give a heavy trampling and then rake over. A surfacing of soot applied at the rate of one peck to the square rod will be beneficial in most places, while light soils but not clayey ground, may also receive 4 lbs. of common salt per square rod. Stir these in before drawing the drills. Raised beds with alleys between are desirable only in the case of cold low lying position. Small plots may be sown broadcast, but sowing in shallow flat-bottomed drills about 1 inch deep, 2 inches wide, and 12 inches apart is the best practice. Then if the seed is sown thinly in these so as to avoid the necessity for much thinning out later on, the Onion maggot is likely to be troublesome, and there will eventually be an extra heavy crop of bulbs pressing against each other. Allowing good space between the rows admits of the plants being left more thickly in the rows and for a freer use of the hoe than is possible when the rows are closer together. It is the White Spanish type and not Tripolis that should be sown now, one or more of the long keepers, such as Brown Globe, James' Keeping, and the Wroxtton being included.

THE BEE-KEEPER.

THE APIARY.

WE have now reached the month of March. The weather has been stormy with us for about seven weeks, with only one dry day during that time. The thermometer now at 42°, a rising barometer, and a few bees flying make us hope for a better time for bees and flowers. Owing to the late inclement weather, the spring season will be a busy one. Bees in early districts should be liberally fed at once where stores are short, and that is the case in many instances. Throw all stimulative and other toy feeders aside, and give at least 6 lbs. of sugar from beneath, then withdraw, keeping in mind the process may have to be renewed in a few weeks hence.

Crown feeding is troublesome and cools the hive unnecessarily, as does the candy feeding above the bees. The advice to feed in January has this year saved many hives. The liberal feeding advised now is not for the purpose of inducing breeding, but to enable the bees to bring to maturity all the eggs laid by the queen. Feeding does no good whatever where there is an abundant supply of food in the hive. In addition to preventing the loss of eggs, adequate feeding prevents the loss of adult bees by flying out, as they do when fed in dribbles.

In late districts the quantity of food given may be slightly lessened, but it is a fact that there is very little difference in the time of bees beginning to breed at any place throughout the British isles where the flora is much alike. Where the flowers are profuse they are doubtless a great stimulus for bees to breed.

Owing to the open winter breeding has been in many cases excessive, so we may expect numerous changes from old to young queens early in the season, and apiarists will do well to see that drone breeders do not take the place of queens now regnant. To be prepared for every exigency young queens should be brought forward early and formed into nuclei at intervals of a fortnight—or in other words, replace the first batch with later ones if the weather is unfavourable for mating. Sometimes April is favourable, and in 1862 many queens were fertilised in May; but often it is June before we can depend upon success, but even this in late districts is the backbone of success.

The greatest concern of the bee-keeper should be to be sure every hive continues breeding till the commencement of the honey flow. See, also, that early nuclei are advancing as they ought during June and July, so that they may be in full strength for the moors. Hives having young queens are always the most active and best workers. Always discard very attenuated and small queens, but do not attempt to select what you may think an "improved" queen, for beyond crossing with two varieties to improve the breed of bees, nothing substantial will result.

I should like to say another word about the two queens in one hive system. A bee-keeper visited me on the 24th of February, with copies of the *Journal of Horticulture*, as well as others of a reliable nature and of an early date, which disprove the "Wells'" claim. My visitor is an old bee-keeper, and he stated the fact that "the system was Scottish," and produced the printed proofs. The contents of one of his hives weighed 2 cwt. He also mentioned that he had a greatly improved perforated divider, which he explained, but with which I have not had experience.

Messrs. George Neighbour & Sons have sent me their illustrated catalogue of (sixty-six pages) hives and apiarian requisites; also books, new, old, and rare.

DEATH OF Mr. WM. SWORD.

On the 26th ult. Mr. Sword, bee-keeper and florist, Bonny View, Falkirk, passed away after a short but sharp attack of asthma in his seventy-eighth year. He won success in trade through fair dealing, and was a highly respected local philanthropist. He was a keen florist, had a small but fine collection of leading Auriculas and other flowers, bringing from Orkney to his native place *Primula scotica* amongst others of his favourites. As a bee-keeper he was an enthusiast, sparing neither pains nor expense in the equipment of his apiary.—A LANARKSHIRE BEE-KEEPER.

TRADE CATALOGUES RECEIVED.

- E. P. Dixon & Sons, Hull.—*Farm Seed Catalogue*.
 A. Findlay, Seed Grower, Markinch, N.B.—*Potatoes*.
 Messrs. Hogg & Wood, Coldstream.—*List of Pasture and Farm Seeds*.
 W. H. Hudson, 199, High Road, Kilburn, N.W.—*Dutch and Other Bulbs*.
 Little & Ballantyne, Carlisle.—*Catalogue of Farm Seeds*.
 J. R. Pearson & Sons, Chilwell Nurseries, Notts.—*Catalogue of Pelargoniums and Other Plants*.
 Oscar Tiefenthal, Wandsbek, Hamburg, Germany.—*Plants and Roots*.
 Tilley Bros., London Road, Brighton.—*Garden Seeds*.
 Chas. Turner, Royal Nurseries, Slough.—*General Spring Catalogue*.



TO CORRESPONDENTS

* All correspondence should be directed either to "THE EDITOR" or to "THE PUBLISHER." Letters addressed to Dr. Hogg or members of the staff often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post, and we do not undertake to return rejected communications.

Moss on Apple Trees (F. J.).—You could not do anything better than continue the annual dusting of the trees with quicklime, for it will not only destroy the moss, but be good against insects, while the falling lime will benefit the soil and, of course, the trees. Draining will improve the ground and health of the trees; but the growth of moss is not always due to wetness of ground, but to dampness of the atmosphere. If you dig holes 4 feet deep and water lodges in them for any length of time, it would be advisable to drain the land, not otherwise.

A Bed of Sweet Peas (J. W.).—Provided you have a trellis, so as to keep the haulm from the ground, there is no reason why you should not succeed. We have seen Sweet Peas forming splendid beds by training them over improvised trellises formed of Pea sticks thrust into the ground at the sides of the bed and inclining over them so as to be just clear of the ground in the centre. The Peas had been sown in the usual way, and when growing through the sticks were trained evenly over the surface. They also look charming when allowed to stray over rockwork.

Late Dessert Apples (Ireland).—To come in after those you name, Baumann's Reinette is a very beautiful, good, but not high-class dessert Apple, yet serviceable for either cooking or dessert. Margil is an excellent dessert Apple, tree of moderate growth, and generally an abundant bearer, but the blossoms are liable to suffer from spring frosts. The fruit is in season from November to February. Another first-class dessert Apple is Scarlet Nonpareil, the tree of moderate growth, and bears freely. The fruit has plenty of colour, and is in use from January to March.

Mixing Nitrate of Soda with Thomas' Phosphate or Basic Slag (E. H. S.).—Instead of agreeing with the dictum, nitrate of soda ought not to be used with Thomas' phosphate or basic slag, but sulphate of ammonia may, we entirely agree with Dr. A. B. Griffiths in saying that sulphate of ammonia ought not to be used with basic slag. Dr. Griffiths says:—"Thomas' phosphate may be mixed with raw phosphates, superphosphates, nitrate of soda, and potash salts, but not with ammonium sulphate, as the free lime (which Thomas' phosphate contains) would liberate the ammonia, and result in loss of this valuable nitrogenous manure."—("Manures and their Uses, page 99.")

Grafting Apple Trees (F. J.).—It is necessary to smooth the cuts with a chisel or sharp knife, as the smoother the surface the less it will hold moisture. The top of the stock must be made smooth where the scion or scions are to rest upon it. As you are going to proceed by crown grafting the scion must only be prepared or cut on the side next the stock, for it is there only that the scion unites with it; and to cut off a portion of the bark on the side next the old bark of the stock simply weakens it, and makes a needless wound, which may cause the failure of the operation.

Shortening Vine Canes (L. F.).—No matter how strong young planting canes are for developing into permanent Vines, they should either be shortened in the autumn before planting or disbudded in the spring after planting. It will not be advisable to shorten the canes now, but as the buds start remove them from the upper portion of the cane down to where a good leading growth can start in a light position; and as a rule the lower this is the stronger the growth. Any laterals between the leader and the ground may be pinched to three or four leaves. Some persons allow them greater extension, and secure at the same time a strong leading cane. Allow several of the buds to start, and choose the most promising as the leader, pinching the others. When the leader gets a decided start further extension of laterals below will not arrest its growth.

Decaying Chestnut Trees (B.).—Instead of boring holes to let the water out of the hollows it would be better to empty them as far as practicable with a pump, and then fill the holes with Portland cement formed into a running consistency with water. For economy two parts of sharp sand or small gravel may be mixed with one part of cement, which should be quite fresh. When the holes are filled with the cement allow it to set, then smooth over the crown with the same material, rounded to throw off the wet, just having it level with the bark around each wound, and over this apply a coat of grafting clay so as to encourage the growth of the bark, which we have known to grow and close over the cement. The thing is to get the water out and keep it out in the future. Clay alone would not do that, but rather accelerate the decay by allowing water to enter.

Grape Hyacinths in Pots (H. C. M.).—We quite agree with you, that as the Muscari, or Grape Hyacinth, is so easily cultivated, it is almost a pity that it is not more generally grown as a pot plant, and used for decoration along with the ordinary Hyacinths, Convallarias, and Narcissi, the treatment in many respects being very similar. To obtain good free-flowering plants it is advisable to repot the bulbs as soon as they lose their leaves, for root action commences very soon afterwards, and if not potted before this takes place they will receive a severe check. The soil used in potting should be a light compost of loam, leaf mould, and sand. Seven or eight bulbs may be placed in a 4 or 5-inch pot, 2 or 3 inches under the surface of the soil, and potted moderately firmly. The pots may then be buried in cocoa-nut fibre refuse, ashes, or in a spare border of the garden. From the middle of December onwards they will require to be examined occasionally, and the plants removed to a cool frame as they start into growth.

Chrysanthemum Cuttings Damping (Hard Lines).—The cuttings have simply damped off by an excess of moisture, the soil being wet to soddenness, consequently sour. This has caused the destruction of the tissues, and the decay has spread upwards, so that the cuttings are black level with the soil. The only preventive is to use sweet loam with a third of well decayed leaf soil and one-sixth of sand, mixed, for filling the cutting pots, surfacing them with the latter, and using a blunt dibber for inserting the cuttings, so that some of the sand is forced down for the base of each cutting to rest on; a little of the sand will drop about each cutting, or it can be pushed into the hole before closing the soil. With this care and attention to keeping the soil moist, but not overwatering, every cutting ought to root and be healthy. Of course, failure may arise from other causes, but there is no apparent trace of fungus, which is very often introduced in the soil, especially leaf mould and old rich garden loam. We suspect your leaf soil is not so good as it should be, and you have used too much of it, also too much water.

Lawn Tennis Court (J. P.).—Many players of tennis prefer grass on account of its being elastic, more pleasing, and less fatiguing to the eyes than a floor of cement. The advantages of a cemented court are—1, It can be played upon at any time of the year, and in almost any weather. 2, Once made it requires no after attention, and on that account is considered the most economical in the end. The "best," therefore, depends upon circumstances. If the court is in a conspicuous position it would be more pleasing in grass, and may be formed either by sowing with lawn seeds after the ground has been properly stirred and duly levelled, or laying with good turf. By using the latter the ground will be fit to play upon as soon as the turf has become established, as it will by the early part of summer; while that formed by sowing grass seeds will not be available for play until the grass has been mown several times, and the ground well consolidated by rolling, which will also promote a closer growth of the grasses. Where there is no objection to the appearance of a cemented court, that certainly is more serviceable than a grass one, especially in or near large towns, where the grasses do not grow freely, are more subject to sooty deposits, and the court is used far oftener than in the country.

Names of Fruits.—Notice.—We have pleasure in naming good typical fruits (when the names are discoverable) for the convenience of regular subscribers, who are the growers of such fruit, and not col-

lectors of specimens from non-subscribers. This latter procedure is wholly irregular, and we trust that none of our readers will allow themselves to be made the mediums in infringing our rules. Special attention is directed to the following decision, the object of which is to discourage the growth of inferior and promote the culture of superior varieties. *In consequence of the large number of worthless Apples and Pears sent to this office to be named, it has been decided to name only specimens and varieties of approved merit, and to reject the inferior, which are not worth sending or growing.* The names and addresses of senders of fruit to be named must in all cases be enclosed with the specimens, whether letters referring to the fruit are sent by post or not. The names are not necessarily required for publication, initials sufficing for that. Only six specimens can be named at once, and any beyond that number cannot be preserved. *They should be sent on the first indication of change towards ripening.* *Dessert Pears cannot be named in a hard green state.* (S. E.).—1, Cockle's Pippin; 2, Scarlet Nonpareil; 3, Dumelow's Seedling; 4, Northern Greening. (Lacelles).—1, Bergamotte Esperen; 2, Easter Beurré; 2, Beurré Rance.

Names of Plants.—We only undertake to name species of plants, not varieties that have originated from seed and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in firm boxes. Slightly damp moss, soft green grass or leaves form the best packing, dry wool the worst. Not more than six specimens can be named at once, and the numbers should be visible without untying the ligatures, it being often difficult to separate them when the paper is damp. (Orchidist).—1, Cypripedium superbiens; 2, C. Stonei platytanum; 3, Dendrobium nobile Cooksonianum; 4, Sophronitis grandiflora. (C. P.).—1, Adiantum assimile; 2, Pteris argentea; 3, Polystichum capensis. (R. D.).—1, Retinospora plumosa; 2, Cupressus Lawsoniana erecta viridis; 3, Thujaopsis borealis.

COVENT GARDEN MARKET.—MARCH 7TH.

MARKET still very quiet.

FRUIT.

	s.	d.	s.	d.		s.	d.	s.	d.
Apples, per bushel ..	2	6	to	9	0	Lemons, case ..	10	0	to 15 0
„ Nova Scotia, per barrel ..	12	0	24	0	Peaches, per doz. ..	0	0	0 0	
Cobs ..	40	0	42	6	Plums, per half sieve ..	0	0	0 0	
Grapes per lb. ..	1	0	2	6	St. Michael Pines, each ..	2	0	6 0	
					Strawberries per lb. ..	10	0	16 0	

VEGETABLES.

	s.	d.	s.	d.		s.	d.	s.	d.		
Asparagus, per bundle ..	7	0	to	8	0	Mustard and Cress, punnet	0	2	to	0	0
Beans, Kidney, per lb. ..	0	6	1	0	Onions, bushel	3	6	4	0		
Beet, Red, dozen	1	0	0	0	Parsley, dozen bunches ..	2	0	3	0		
Carrots, bunch	0	3	0	4	Parsnips, dozen	1	0	0	0		
Cauliflowers, dozen	2	0	4	0	Potatoes, per cwt.	2	0	4	6		
Celery, bundle	1	0	1	3	Salsafy, bundle	1	0	1	5		
Coleworts, dozen bunches	2	0	4	0	Scorzonera, bundle	1	6	0	0		
Cucumbers, dozen	2	0	7	0	Seakale, per basket	1	3	1	6		
Endive, dozen	1	3	1	6	Shallots, per lb.	0	3	9	0		
Herbs, bunch	0	3	0	0	Spinach, bushel	1	6	3	0		
Leeks, bunch	0	2	0	0	Tomatoes, per lb.	0	6	0	9		
Lettuce, dozen	0	9	1	0	Turnips, bunch	0	3	0	0		
Mushrooms, punnet	0	9	1	0							

AVERAGE WHOLESALE PRICES.—OUT FLOWERS.

Orchid Blooms in variety.

	s.	d.	s.	d.		s.	d.	s.	d.	
Aram Lilies, 12 blooms ..	1	6	to	3	0	Narciss, White (French),				
Azalea, dozen sprays..	0	4	0	6	dozen bunches..	3	0	to	5	0
Bouvardias, bunch ..	0	6	1	0	Pelargoniums, 12 bunches	6	0	12	0	
Camellias, dozen blooms ..	0	9	2	0	Pelargoniums, scarlet, doz.					
Carnations, 12 blooms ..	1	6	3	0	bunches ..	4	0	6	0	
Daffodil or Lent Lily ..	1	6	8	0	Primula (double), dozen					
" double ..	2	0	3	0	sprays ..	0	6	1	0	
" single ..	2	6	9	0	Primroses, doz. bunches ..	1	0	2	0	
Eucharis, dozen ..	2	0	4	0	Pyrethrum, dozen bunches	2	0	4	0	
Gardenias, per dozen ..	6	0	9	0	Roses (indoor), dozen ..	1	0	2	0	
Hyacinths, dozen spikes ..	2	0	4	0	" Tea, white, dozen ..	1	0	3	0	
Hyacinth, Roman, dozen					" Yellow, dozen ..	2	0	4	0	
sprays ..	0	6	0	9	Roses (French), per dozen	3	0	6	0	
Lilac (French) per bunch	2	6	4	0	Roses, Safrano (English),					
Lilies of the Valley, dozen					per dozen ..	2	0	3	0	
sprays ..	0	6	1	0	Roses, Marechal Neil, per					
Lilium longiflorum, per doz.	3	0	6	0	dozen ..	3	0	6	0	
Maidenhair Fern, dozen					Snowdrops, doz. bunches..	1	6	3	0	
bunches ..	4	0	6	0	Tuberose, 12 blooms..	0	6	1	0	
Marguerites, 12 bunches ..	2	0	4	0	Tulips, dozen blooms ..	0	6	1	6	
Mignonette, 12 bunches ..	3	0	6	0	Violets, Parme (French),					
Myosotis or Forget-me-					per bunch..	2	0	3	6	
nots, dozen bunches ..	3	0	6	0	Violets, Czar (French), per					
Narciss, Yellow (French),					bunch ..	2	0	2	6	
dozen bunches..	1	6	2	6	Violets (English), dozen					
Orchids, per dozen blooms	1	0	9	0	bunches ..	1	0	2	0	

PLANTS IN POTS.

	s.	d.	s.	d.		s.	d.	s.	d.	
Arbor Vitæ (golden) dozen	6	0	to	12	0	Ferns (small) per hundred	4	0	to 8	0
Arum Lilies, per dozen	6	0	12	0	Ficus elastica, each	1	0	7	6	
Aspidistra, per dozen	18	0	36	0	Foliage plants, var., each	2	0	10	0	
Aspidistra, specimen plant	5	0	10	6	Genista, per dozen	9	0	15	0	
Azaleas, per dozen	24	0	42	0	Hyacinths, per dozen	5	0	9	0	
Cineraria, per dozen	6	0	12	0	Lilium Harrissi, per dozen	15	0	18	0	
Cyclamen, per dozen	9	0	18	0	Lycopodiums, per dozen	3	0	4	0	
Dracæna terminalis, per dozen	18	0	42	0	Marguerite Daisy, dozen	6	0	12	0	
Dracæna viridis, dozen	9	0	24	0	Mignonette, per doz.	6	0	9	0	
Ericas, per dozen	9	0	24	0	Myrtles, dozen	6	0	9	0	
Euonymus, var., dozen	6	0	18	0	Palms, in var., each	1	0	15	0	
Evergreens, in var., dozen	6	0	24	0	„ (specimens)	21	0	23	0	
Ferns, in variety, dozen	4	0	18	0	Solanums, per dozen	9	0	12	0	
					Tulips, per dozen	6	0	9	0	



PROTECTION.

"I'd have a moderate tax upon imported flour; bread is so cheap now that even the poorest people are wasteful. Make 'em pay a fair price for it; there would soon be an end of waste, and we who grow the Wheat should have a chance again!" So said to us recently a typical British farmer, who, in his capacity of village innkeeper, farmer, brewer, and guardian of the poor, sees much of the economy of humble life, has strong views thereupon—views which are not altogether unbiassed. He is probably right in some degree about the waste; the French proverb, "Provision—profusion," holds good the world over, but he longs in vain for such a measure of protection as we told him in answer to an appeal for our views on the subject.

There is, however, a form of protection within our gates which is both desirable and possible—*i.e.*, protection against adulteration of food, of shams and cheating—that seething undercurrent of trade rascality which saps the very vitals of fair trade and honest dealing. One of the very worst forms of this is the mixing of separated milk with new milk on so extensive a scale as to seriously affect the interests of, and to throw another burden upon the producer. At meeting after meeting of the Central Association of Dairy Farmers has this evil been discussed, and resolutions been passed appealing to the Legislature for aid. Strangely enough, so far, such appeals have been made in vain. To the resolution, "That in consequence of the great injustice and loss sustained by milk producers and consumers by the mixing of separated milk with new, and the sale of the mixture as new milk, we petition the Government to pass an Act making it compulsory that every vessel containing a gallon or more of separated milk, should be labelled with 2-inch letters 'Separated,' &c.," the reply sent from the Board of Agriculture was:—"I am directed by the Board of Agriculture to inform you that the resolution referred to in your letter has been communicated to the Local Government Board, to the business of which department it especially relates."

The Local Government Board state that they are not aware of the necessity for any such special statutory provision with regard to separated milk as is suggested, but they think that the question is one which will doubtless be brought before any Select Committee to which proposed amendments of the Sale of Food and Drugs Act may be hereafter referred. Such answers are of the true circumlocutory official type, and are only to be met by persistent and combined effort by the Royal and other agricultural societies. If this is done legislation will follow in due course, as this is not a mere matter of trade interests, but one which affects the public.

As Mr. A. Robinson, of the Belgravia Dairy Company, points out, whole milk contains 87 per cent. of water, which in the separated milk is left conveniently white through retention of casein, which is the putrifying (offal) constituent of milk, as well as of badly made butter. Mr. Robinson suggests a system of taxing and licensing the use of separators and of registering the premises where they are used. Consumers might well look to their own interests in the matter, for what with annatto, starch, and separated milk, to say nothing of water pure and simple, purity in milk has become a very doubtful quantity. Dealers say that the ordinary London consumer objects to milk which has not been touched up with annatto to impart the 'rich' yellow so dear to cockney eyes. Dear, innocent souls!

They have heard that the best cream is yellow, and they like to see it in their milk.

Equally in the interest of the consumer as well as of the producer is it also important that the sale of foreign meat should be checked so closely as to prevent the wholesale substitution of it for the best home-fed beef and mutton, which was exposed in the recent report of Lord Onslow's Committee. Here protection is so obviously required that we should much like to know if action of any sort has been taken in the matter. We would have the names of every one of the rascally swindlers made so public that they might be avoided, and any fine imposed upon them should be sufficiently heavy to affect their long purses. The British farmer is sufficiently burdened without being robbed of his trade in this or in any unfair way, and he has a just claim upon the Legislature for protection from dishonest dealers.

WORK ON THE HOME FARM.

Now that hens are laying so freely plenty of eggs can be spared for hatching, and enough chickens should be reared during the next few weeks both for table supply and for affording a full supply of autumn and winter eggs. Allow an ample margin in numbers for both purposes; a few dozen extra chickens can always be sold readily enough when not wanted, and a surplus of eggs in winter is something pleasant to look forward to, as a thing that would well repay one for using a little extra corn. Feed young broods frequently, but have no food thrown about wastefully, or where wild birds can come, or there will be a lot of sparrows always on the watch. Sussex breeders of early birds feed by lamplight morning and night, and are well repaid for their care. Move the coops frequently, have a feeding board in front of each coop so made that it can be turned up over the front of the coop at night and fastened so closely as to prevent losses from rats, foxes, or other vermin. This is just one of those trifling matters of detail of which dear bought experience has shown the importance. It was the loss of some eighty chickens at an off-hand farm, several years ago, that showed how necessary it was to go carefully over every little matter to see that nothing was wanting to ensure success, and then to require it at the hands of whoever was responsible.

Ewes and lambs are now folded upon Swedes which have a capital growth of green tops for the lambs to run forward upon, for the Swedes are sound and without a blemish. Dock the lambs early, and look closely after foot-rot if it is known to affect the flock. Long ago, before the trials by the Royal Agricultural Society, we had proof that it was infectious, and never since have we suffered a clean flock to go near an infected one. "Kneelers" in a flock—*i.e.*, those sheep with such sore feet that they kneel to feed, are a disgrace to the shepherd, and are almost invariably an indication of negligence. Remove every badly affected sheep from the flock, examine and dress the feet daily, and they will soon be sound.

OUR LETTER BOX.

Pickle for Hams (J. W. D.).—The recipe to which you refer is for hams only, not for bacon. This pickle is *not* boiled before use, but that given subsequently for bacon is boiled. Give the hams a full month in the pickle, turn them frequently, give equal care to the smoking, and the flavour will be delicious.

METEOROLOGICAL OBSERVATIONS.

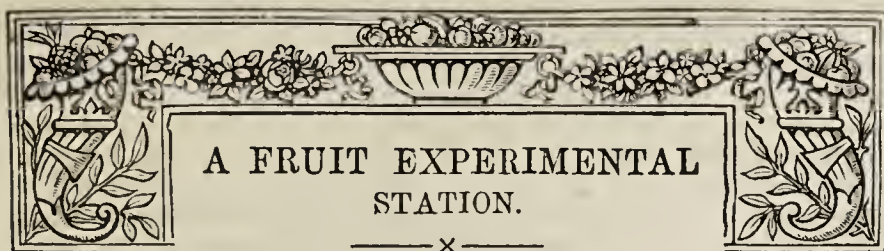
OAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude, 111 feet

DATE.		9 A.M.				IN THE DAY.				Rain.	
1894. February and March.		Barometer at 32°, and Sea Level.	Hygrometer.		Direc- tion of Wind.	Temp. of soil at 1 foot.	Shade Tem- perature.		Radiation Temperature		
			Dry.	Wet.			Max.	Min.	In Sun.		On Grass.
		Inchs.	deg.	deg.		deg.	deg.	deg.	deg.	Inchs.	
Sunday ..	25	29.828	42.3	40.0	E.	36.3	52.8	32.8	53.9	27.1	0.101
Monday ..	26	2.767	50.3	48.1	S.	38.1	53.0	41.9	55.9	40.0	0.024
Tuesday ..	27	29.836	49.9	48.3	S.W.	40.1	54.6	49.1	91.1	44.1	0.090
Wednesday ..	28	29.916	38.7	37.8	N.E.	40.8	47.3	37.7	67.2	32.1	0.149
Thursday ..	1	29.942	47.1	43.7	S.W.	40.1	48.8	35.2	68.0	28.8	0.124
Friday ..	2	30.065	40.1	38.1	W.	40.6	51.8	36.3	93.1	29.0	—
Saturday ..	3	30.238	33.8	32.3	N.	39.9	50.0	28.6	80.1	22.2	—
		29.942	43.2	41.2		39.4	51.2	37.4	72.8	31.9	0.488

REMARKS.

- 25th.—Overcast early with spots of rain; rain from noon to 2 P.M., and overcast after.
 26th.—Fair early; overcast from 9 A.M. with occasional drizzle, and drizzle or rain all afternoon.
 27th.—Overcast and damp early; rain from 10 A.M. to 11.30 A.M.; bright sunshine from noon to sunset, and bright night.
 28th.—Almost continuous rain from 6.30 A.M. to noon; fine and frequently sunny from 1 P.M., and clear night.
 1st.—Fair morning; frequent slight rain after noon, and almost incessant rain from 3.50 P.M. to 10.30 P.M.
 2nd.—Bright sun throughout.
 3rd.—Foggy early; bright sun from 10 A.M.; bright night.
 As a whole dull and rainy, but the last two days sunny. Temperature 10° above that of the preceding week, and about 4° above the average.—G. J. SYMONS.



VERY frequently, and quite recently, a strong desire has been expressed in our columns for the establishment of gardens for experimental purposes, with the view to public instruction. It seems to be conceded that such agricultural experimental stations as those at Rothamsted and Woburn have been of great value to the farming community, and the same may be said of the stations in connection with the agricultural colleges at Downton and Cirencester. This being so, it may be taken for granted that a thoroughly equipped station in which experiments with hardy fruits of various kinds, as well as other useful garden crops, would not be less serviceable to at least an equal number of cultivators, who will increasingly have to resort to what may be termed garden methods in the management of land to enable the greatest increase to be obtained from it. We are, whether for better or worse, entering on what may be termed a social revolution. That the inevitable changes which time is bound to bring will be disappointing to many no one can doubt, but it is earnestly to be hoped that they will be effected with a minimum amount of friction, as well as eventually result in a maximum amount of national contentment. In these days, and those before us, of small profits arising from land cultivation exact knowledge on essential points is particularly needed, and certainly as much so by the great majority of small holders as any other class. This can only be acquired by systematic experiments under scientific direction, carried out by intelligent practical men.

Woful indeed is the ignorance among the great mass of tillers of the soil on the cultivation of hardy fruits. Trees and bushes are planted in thousands yearly, which, through errors in choice and rough methods in planting, also through non-pruning or wrong pruning, that cannot possibly be otherwise than disappointing; deplorable instances are only too apparent, and which could not have occurred had the planters possessed knowledge and brought this to bear in the work in hand. And so, too, in respect to important vegetables. Take the valuable and profitable crop the Onion. We have had evidence enough of late of its great enemy the fly and resulting maggot mastering would-be cultivators in various parts of the country. Yet, at the same time, proof of a few earnest men conquering the enemy, and being rewarded by crops of special value. Well-conducted experiments with various fruits as well as important vegetables, solely with the object of acquiring and disseminating information, could not fail to be of national benefit.

Much has been done by isolated and altogether commendable action by gardeners, but only comparatively few of these, in the press of multifarious duties and demands, have the requisite time and means to concentrate attention on given subjects, and conduct experiments systematically and continuously for arriving at definite issues; and much of what is accomplished in a private way is regarded as very much of a private nature, though there are many generous exceptions. We appear to have no societies, nor are we likely to have any, rich enough and otherwise able, to establish and maintain from year to year strictly educational stations connected with horticulture. The strongest of them could not exist without shows, and these, with the exception of the Royal Horticultural Society, cannot be provided without the greater part of the income being expended in prizes. Shows of garden produce we must have. They have done great good in stimulating to higher culture and widening the interest in and expanding the industry of horticulture.

We want these, but something more—something that other countries have but we have not—experimental stations or schools of horticulture, call them what we may. These in a small way are likely to be forthcoming as provided by county councils, and they are bound to do great good in the districts. Derbyshire is showing the way under the guidance of our able coadjutor Mr. Edward Luckhurst, and there is a disposition in other counties to adopt similar methods. All this is good, but we want something more extensive and more complete, something in fact sufficiently comprehensive to attract the attention of the nation; something wherein the object is not to make as much money as possible, but primarily to yield instruction by demonstrating right and wrong methods and results for the benefit of all who may need guidance on fruit culture and other useful adjuncts.

For carrying out a project of the character indicated four essentials are imperative—1, capital; 2, security; 3, scientific supervision; 4, sound practical management. We are glad to believe that this combination is practically effected. England has not placed itself at the head of nations by a system of State-aided industries. Patriotism and strenuous endeavour have come to the rescue in emergencies, and in time removed difficulties that at the moment appeared formidable. We may have lost the lead for a time in certain arts, but it has usually been regained by the persistent endeavour inherent in our race. Public-spirited men have rarely long been wanted before being forthcoming to help on any good work, and the work in question, an experimental fruit station, in extent adequate to present public requirements, is to be established by a noble Duke, who comes of a family whose ancestors, and one in particular, did much for agriculture, arboriculture, and horticulture in his day and generation—we mean John, Duke of Bedford.

The present Duke, the proprietor of the greatest market for garden produce in the world—Covent Garden—and on whose grand patrimonial estate at Woburn agricultural experiments have been for some years conducted under the supervision of Dr. Voelcker, has set apart about twenty acres of land for an experimental fruit station, which he will establish and maintain. Here then is the first and most rare twin essential combination—capital and security. Of this station the Duke's friend, Spencer Pickering, Esq., F.R.S., of Harpenden, will be the Honorary Scientific Director, and we think it is virtually settled that Mr. William Iggulden, who has been head gardener to the Earl of Cork and Orrery for thirteen years, may be the practical manager. Practical indeed he is, and something more, and this is essential—the association of literary attainments with sound cultural knowledge. A master of manipulative details in fruit culture, he is also one of the most ready and accurate writers in the gardening ranks. Mr. Iggulden's attainments in the latter respect, acquired by persevering endeavour, have been of advantage to him in the past, and will probably be more so in the future. In the experiments in question exact records will be necessary and intelligent reports, and thus it is that he is considered qualified for the position in question. Literary aspirants may do worse than endeavour to profit by his example. The secret of his success rests in his having sought untiringly for accuracy in expression, and not resting satisfied till he found it.

The nature of the Woburn fruit experiments will be determined by the Director. It may be expected that they will be comprehensive and exhaustive. They will, no doubt, have reference to trials of varieties, testing various forms of stocks, planting, pruning, manuring, preserving, and other matters appropriate to the subject of fruit culture, a correct register being kept of all processes and results. In a word, the work must be thorough, or it would not do to attempt it at Woburn. What the outcome of it will be, time alone can tell. If it should peradventure eventuate in such a work as Mr. Sinclair produced from long and exhaustive experiments with Grasses, Woburn will score another triumph worthy of its name.

Sinclair's work, the *Hortus Gramineus Woburnensis*, is a classic. It embodies the results of experiments on the produce and nutritive

qualities of different Grasses and other plants used in the food of the more valuable domestic animals, and was published in 1824. The record is a marvel of patient care and minute accuracy, and the work has been of untold benefit to this and other countries. It is the pioneer work of its kind, the foundation on which others are based, and led to the method becoming established of converting pastures into food stores by well selected herbage plants instead of more or less poverty stricken weedy wastes, the result of thoughtless inaction and lack of knowledge. The projected fruit experiments remind of the valuable work of Sinclair, whose name is apt to be forgotten in the lapse of years. He was a gardener of great attainments, and so would appear to have been his successor, Mr. Forbes, who conducted experiments with Willows, Conifers, and Heaths, producing respectively the *Salicetum Woburnense*, the *Pinetum Woburnense*, and the *Ericetum Woburnense*, also after a tour on the Continent he prepared the *Hortus Woburnensis*—a catalogue of plants grown in, also containing plans of the gardens of Woburn.

It will be apparent that Woburn is historic as a seat of horticulture, agri, and aboriginal education, and is, therefore, singularly appropriate as the new fruit station to meet the needs of modern times. The present Duke of Bedford would seem to have inherited the tastes of his great grandfather, the famous Duke John, and being still in youthful manhood may do good service to his country in the arts of peace after his training in the art of war. With his charming Duchess the Duke lives a happy domestic life on his fine estate, both seeking to do good to those around them. The new undertaking will be watched with interest, and may have important and far reaching results.

EVERGREENS.

EVERGREENS! With what a sense of grateful repose the eye turns to them during the stern reign of winter! We never perhaps quite realise how much they mean to us during the gloomy months extending to nearly half the year until entering some demesne in which their merits have not obtained for them that liberal place they deserve; or on the larger scale, some tract of wind-swept country destitute of Fir plantations, and the friendly shelter they afford. The latter are, of course, outside the range of a gardener's work; it is the domain of our neighbour, the forester. We are each and all of us practically confined to a little world of our own; but that does not debar us from taking an occasional look over the garden wall, where sufficient is generally found to satisfy the most ardent worker. A few light touches of the pen on this large subject must leave many thoughts unexpressed. I need not dwell on the subject, which has been so recently treated in these pages—viz., that of affording nourishment to shrubs and trees by manuring them; but I can add my testimony to the great value of the practice so advised in a department which has ever been one of prominent interest in my gardening life. Truly it is taking me a long time to tune my pipes, but the music book is so vast one hardly know which page to open; but I turn to the great members of the family, the Coniferæ, which have for some years received much attention, and many of which have now proved themselves eminently suited to our variable climate, though with the more recent introductions it will be the pleasing (it is to hoped) experience of future generations to note their established characters.

In the accumulated wealth now to be found in the nurseries some difficulty may result in selecting evergreens, and due consideration of soil and locality are necessary to obtain good results. More especially is this required with the tree forms. In the infant stage all may go on swimmingly, but as they go up and away from the friendly shelter of their neighbours, and strike down for stronger food, they behave accordingly, and it may be the disagreeable thought crops up that the selection has not been a happy one, too plainly evident by some specimens not only turning up their nose but their toes as well. Some there are, happy children of Nature, that adapt themselves in some degree to all circumstances. It is not easy, either with these little fellows, 3 or 4 feet high, or even less, at planting time, to realise what they will attain at maturity. In the hurry and pressure of work we may perhaps pick up the telescope required for the long mental vision of a century hence, and look through the wrong end.

Examples of such mistakes are to be seen, and a Cedar or other stately tree finds a place where there is only room for a

Laurel. The Cedar of Lebanon is a tree that will brook no rival, and if planted near a residence, villa or otherwise, though it may have room to grow, its dignity is such that the dwelling will be dwarfed by comparison; nor even in the company of their first cousins is the acme of effect attained, but a group in the distance of an open stretch of park does, and alone does them justice. A solitary specimen, grand though it be, looks lonely. I have thought, and others may have thought so too, that there is some subtle influence, *je ne sais quoi*, pervading the silent life of trees tending to give them the air of thriving best in the company of their fellows, but, as with us, they must be kindred spirits. Influence of soil has a marked bearing on the character of trees; the limestone seems admirably adapted to the wants of the Silver Fir tribe, especially I have noticed this in *Picea nobilis* to such an extent that visitors have remarked the highly glaucous tint resulted from their being a distinct and superior variety, but it was not so.

To skip many pages of my imaginary book and come to what may be termed evergreens proper, the Laurel, the common Laurel, so common, but so beautiful in the winter,

"When suns no longer shed life-giving beams
Through Nature's tears, the polished Laurel gleams
And wields a power
To steal the sadness from stern Winter's reign,
Till Spring returns with 'all her varied train'
Of leaf and flower."

This must claim the first place, forming, as it generally does, the groundwork of our shrubberies. Setting aside its designation of "common," it is an important factor not only in the kept grounds, but through many demesnes large patches are found. It has many qualities, all good ones I think, and is incomparable when used *en masse* for its bright and cheerful tone in a landscape, and not any of our evergreens are more amenable either for covering a given space in the shortest time or being kept within certain bounds if so desired. In shrubberies that hedge-like cropping sometimes practised results in a stiff and formal appearance not natural to them, and far better is it to check their exuberant growth by taking out the strong points with the lopping shears.

A long stretch of shrubbery with adequate depth offers a fine field for a masterly hand in either planting or improving; an undulating front line, with here and there the bold sweep of an open bay, in which Daffodils or other hardy flowers massed give a happy effect. The grouping of evergreens in distinct varieties, too, adds a charm with its rhythmical tones of colour, from the deep funeral note of the Yew to the light cheerful tint of the Griselinia. Where limited space does not allow of the broader lines being carried out, the dot or mixed system is to some extent unavoidable in obtaining variety. In this system much of pleasing interest is to be found, but whilst adapting itself to some circumstances, it is not the ideal for an extensive demesne. But large or small, a well kept shrubbery on a winter's day is always viewed with pleasure. Clean to a fault some are kept, and the natural fertilisers and foot-warmers—the leaves—are carefully scraped off and carted away, hence the necessity sooner or later for feeding of some kind, or starvation sets in, and the denizens of the shrubbery do not have that happy look that well-fed beings, animal or vegetable, should have, and if they cannot have that, I am inclined to say we should be better without them.

As temporary inmates of the flower garden, during the winter some of the more refined of our evergreens adapt themselves admirably. Small plants of *Retinospora* in variety or the different *Thujas* relieve the flatness of the beds and give variety. After several seasons of this work, and the consequent autumn and spring shifting it entails, they can then be relegated to more permanent situations in the shrubbery or ornamental grounds. In the vicinity of large cities and manufacturing towns more than ordinary circumspection is required in selecting suitable evergreens for planting. A tolerably safe guide should be in note what has already succeeded, and what has not; beyond that, planting must be to some extent experimental, the more fastidious of the evergreen family being left for those places where smoking is not allowed.

Last, but not least, are those evergreens which in their season of gorgeous inflorescence stand unrivalled—the Rhododendrons. In a limestone country I had some difficulty in endeavouring to establish some in a shrubbery. Get peat, may be said; yes, but it was easier to talk of peat than to get it. Leaf mould was the next best thing. With that as soon as they felt the lime-impregnated soil, thus far would they go and no farther; yet in the woods of the same estate they flourished by thousands. The secret did not want much discovering, for it lay on the surface in the annual crop of leaves, which not being in the kept grounds offended no one. And did these flourishing Rhododendrons root down? no,

they knew better than that, but up, up, ever up, greedily absorbing their annual meal of leaves.

To say that I have only commenced on this subject will, I fear, be no excuse for me with the Editor, for I hear his pruning scissors already snapping ominously amongst my evergreens; for that reason I must still keep in many thoughts that I should be happy to relieve myself of, or he might too, in his wrath, snip up "the Shamrock" that is to follow.—E. K., *Dublin*.



DENDROBIUM NOBILE.

WHEN paying a visit the other day to Mr. H. Bromet, an amateur gardener in Tadcaster, I saw an exceedingly well-flowered plant of the above. It had about eight pseudo-bulbs, 12 to 14 inches in length, carrying sixty flowers; very creditable to the amateur grower.—J. S., *Grimston*.

CYPRIPEDIUM ASHWORTHÆ.

THE *Cypripedium* depicted in the accompanying illustration (fig. 33) is a distinct hybrid, and when a plant of it was exhibited by E. Ashworth, Esq., at a meeting of the Royal Horticultural Society in November last an award of merit was adjudged. It is said to be the result of a cross between *C. Leeanum superbum* and *C. selligerum majus*, and the flower is of an attractive appearance. The dorsal sepal is very fine, chiefly white with a green base spotted purple. The sepals and lip are of a rich bronzy purple shade.

PACHYSTOMA SPECIOSUM.

THIS interesting Orchid is now in flower at Kew. *P. speciosum* was introduced from Ceylon, and is also known under the name of *Ipea speciosa*. The flower is comparatively large, solitary as a rule, and supported on a slender purplish-coloured scape about 1 foot high. The sepals are nearly 2 inches in length, and, like the petals, of a rich yellow colour, the lip of the same shade, but enriched with a few brownish stripes. It is an Orchid for choice collections and blooms without the leaves.

DENDROBIUM BARBATULUM.

THE growth of this beautiful *Dendrobium*, which is now in bloom at Kew, reaches a height of about 1 foot, and the flowers, borne in dense racemes about 6 inches in length, are white, touched with pink. They are of neat shape, the sepals and petals narrow, and of about equal width. Sometimes the flowers are described as pure white, but those of the type at least are tinged with pink. It succeeds best on a block of wood, and in its native country is found most frequently on small trees in full exposure to the sun, being comparatively rare in the shade. The plant requires an abundance of heat, and, in particular, moisture during the summer months when growth is being made.

ORCHIDS AT LIVERPOOL.

TO many readers, who will not have an opportunity of seeing some of the old favourites, a few words as to the condition they are in may not be out of place. At Cleveley, Mr. Cromwell's *Cœlogyne cristata*, numbering over one dozen pans, are still very gorgeous, and covered with flowers. The variety *Lemoniana* is a distinct gain, and finds many admirers. A bank of *Lælia anceps* and the white variety, containing over 500 flowers, is past its best; but it has been a great attraction, and shows how effective this free-flowering Orchid is in masses. Some of the finest *Cymbidium eburneum* I have seen were also in flower.

At Allerton Beeches there is always a treat at any season of the year, and nowhere in the district are Orchids better cultivated. Here the white *Lælia anceps* is also grown to perfection. At the time of my visit there were sixty splendid spikes open, averaging four flowers on a spike. A beautiful variety of *Odontoglossum Alexandræ*, carrying seventeen gigantic flowers; *Cymbidium eburneum*; *Cypripediums* *Boxalli*, *atratum*, and *villosum*, carrying some fifty flowers each; and *Rothschildianum*, vigorous plants with fine spikes; and the not-often-met-with *Cattleya Walkeriana* were amongst the best of the plants in flower. The seedling *Cypripediums* were marked by some promising flowers just expanding.

At Woolton Wood Mr. Todd had a fine display of *Cœlogyne cristata*, consisting of twelve pans, some of which contained over

500 flowers. *Cypripediums* *Hartwegi*, *grande*, *selligerum*, *villosum*, and seedlings were also good, as were *Dendrobium fimbriatum* and *Oncidium Cavendishianum*. The *Masdevallia* house promises to be a fine sight in the course of a few weeks.—R. P. R.

ORCHIDS IN NORTHUMBERLAND.

GARDENING has always had prominence in this county, and it is pleasing to record that the taste for Orchids is daily increasing. Mr. E. Hopper, Riverside, Morpeth, devotes over a quarter of an acre of glass structures to the cultivation of Orchids. On the occasion of a recent visit, one of the most striking features was the cultural skill that was everywhere displayed, which reflected the highest credit on the head gardener, Mr. Wood. A grand example of *Lycaste Skinneri*, in 6-inch pot, with five spikes, was prominent in the first house we entered. *Cypripedium insigne* was well represented by a number of pots, the plants in which contained some large flowers.

The *Cypripedium* house contained *Cypripediums* *Boxalli* and *Lowi* in bloom, also *Dendrobium Ainsworthi*, *Cœlogyne flaccida*,



FIG. 33.—CYPRIPEDIUM ASHWORTHÆ.

Saccolabium gigantea, *Cœlogyne cristata* (Chatsworth), also *Cypripediums* *insigne*, *marginatum*, and *callosum*. In leaving here, the next structure we entered was a conservatory or show house. Double *Cinerarias* were very fine, *Arum Lilies* were splendidly grown, as many as 100 flowers on twenty pots. It is a special variety, as they are in bloom before Christmas. The *Cattleya* house contained a magnificent specimen of *Oncidium splendens*, ten blooms; *Dendrobium Wardianum*, *Lælia superba*, and the curious *Angræcum sesquipedale*, carrying six flowers. *Vanda gigantea*, forty flowers, and *Cattleya Percivalliana*, *Angræcum eburneum*, and the new hybrid *Dendrobium leucochilum*, which is a very interesting plant. *Lælia glauca* and *Cymbidium eburneum* were also in bloom.

The most interesting plant in the collection, however, was *Cattleya Trianae alba*, which the owners value very highly. The sepals are pure silvery white, and the labellum tinged with magenta, the plant having pseudo-bulbs with leaves on. *Phalænopsis Schilleriana* was throwing up spikes of bloom. A new cool house facing the north for *Odontoglossums* and *Masdevallias* is in course of construction. No visitor to the north on a garden ramble should

miss visiting this place, which is close to the station. From both the owner and the gardener they will receive a most courteous welcome. An excellent library is provided for the young men, all botanical and the latest writings on horticulture are constantly procured for the edification of those employed in his gardens.—**BERNARD COWAN, F.R.H.S.**

MASTERING THE ONION MAGGOT.

FOR the two years previous to last season I tried to master the Onion maggot in two different ways. On taking charge of a Berkshire garden in September my predecessor told me he could not grow Onions, and the plot told me so also, as fully half of them were destroyed by the maggot. I resolved to try if I could master the enemy. I tried trenching and burying horse manure a foot deep, dressing with soot and lime when the plants and their enemy appeared, but it proved the master. I then tried cow manure, also used stable drainage, with little better effect. Last year I thought I would try petroleum. I put about a pint into three parts of a bushel of burnt garden refuse, and as it was showery weather I sowed this over two Onion beds, one of light the other of heavy soil, taking care to remove all affected plants. I put these—Onions and maggots—into some of the ashes to see the effect. My mixture killed the enemy, so I was the master at last. No more maggot appeared on the bed in the stiff soil after the first dressing, but I gave it another in about a month to make sure; but in the lighter soil I found I had to give three more dressings before I could save the crop, and the Onions were small. After the second dressing on the stiff soil the plants went ahead as well as anyone could wish, and a better bed of Onions I do not think could be wished for. Some of the bulbs measured 14 inches round, and the smallest 8 inches at housing time. I then came to the conclusion that petroleum is the thing to keep the Onion maggot down. I hope some of my fellow men will benefit by my experience.—**A. GOODALL, Northaw.**

WHEN entering about nine years ago on the garden under my management it had a very bad reputation for Onion growing, and certainly the crop harvested in the autumn of the first year was anything but encouraging, as from a large breadth we only gathered a few stones of inferior quality bulbs, the maggot taking the other plants. Since that time till now we have gathered abundant crops of excellent quality, having large quantities for market after supplying home requirements.

The method of cultivation adopted is to sow as early as possible, in January if practicable, covering the seeds with the residue from a garden smother, in which all sorts of rubbish have been reduced to a powder. This we carefully keep dry till required. We sow the seed thinly, and never single the plants, as we find it is an unnecessary operation.

This autumn we took advantage of the fine dry weather at the end of November to sow a few rows of Onions on the 30th as an experiment. We first saw them above ground when the snow suddenly disappeared on February 2nd, and they now (March 5th) look promising, although they have had no protection, and are in an exposed position.

We have not found spraying or dressing of any sort necessary so far. Whether it is that the potash in the smother residue used in covering is distasteful to the fly, or the non-thinning acting as a preventive to its successfully depositing the eggs, or if it is partly due to both is a hard nut to crack, but the results have up to now been most satisfactory.—**FIFER.**

I HAVE been much interested in recent articles which have appeared in the Journal on the Onion maggot and how to prevent it. One writer advises sowing in boxes or frames and planting out. My experience with that method was disastrous, fully 75 per cent. of the plants being attacked after planting out, and, of course, destroyed. That was in the year 1891. In the following year the land was prepared in the usual way, and the seed sown where the crop had to stand. During the summer I followed the orthodox plan of dusting with lime and soot at frequent intervals. The crop was better but still unsatisfactory. Last year the land was again prepared as usual and sown the first week in March, the season being a favourable one for germination. The plants came up well, and were all thinned by the first week in June to about 6 inches apart. After this they grew rapidly, when, the first week in July, on looking over them I discovered eggs deposited on, I should say, fully one-fourth of the plants. The eggs were like those deposited on flesh meat by our friend the blue-bottle, only perhaps a trifle smaller. I at once had the plants watered through a rose with liquid from the cow-byre, reduced to

half its full strength. This application was renewed twice afterwards at intervals of a week, and I was much pleased to harvest one of the best crop of Onions I have seen in the north.—**G. CRAIG, Richmond.**

I AM raising all my Onions in boxes. It seems at first sight rather an extravagant method; but last year those raised in this way were so superior and so little affected by maggot as compared with those sown in drills in the open, that I am sure the former method will be cheapest in the end. I transplanted the seedlings from the boxes directly to the open ground. This saved much labour. The ground is now ready for the reception of the plants; it was double dug in October, and a few days ago a thick dressing of cow manure was worked into the top spit. In addition a sprinkling of superphosphate will be raked in when the plants are set next month. One of the most efficient and at the same time the cheapest of manures for Onions is slag flour. A slight dressing of sulphate of ammonia put on after the slag has been hoed in quickens growth in a wonderful manner. These two agents ought not to be applied together, else a great loss of ammonia will ensue.—**R. P. BROTHERSTON.**

I HAVE been much interested in the "Appeal" by "W. S. E." on page 159, and in the various replies thereto on pages 178 and 179, particularly in that of "J. H. W.," who well describes what is, I am assured, a most effectual method of "mastering" the pest. I was the more interested in the contribution by "W. S. E." (though it gives no information whatever), as I believe I was the lecturer he referred to, and unfairly so, as by his allusion to the "Professor," and his long names for new diseases, he leaves it be inferred that I was guilty of shrouding my subject in a haze of similarly long names difficult to be understood. Such, however, is entirely contrary to fact, as in my lectures I am always careful to avoid long and difficult words, and to make myself as plain and easily to be understood as possible. I am frequently being complimented upon the plainness of my language, and actually was so at the close of the lecture, at which your correspondent asked the very foolish question he refers to in his "Appeal." When the question was asked, I realised at once, as also did others present, that the object in asking it was to raise a laugh, if possible, at my expense. As you are aware, Mr. Editor, my experience as a cultivator goes back over a long period, and for many years, by adopting the practices I now recommend, I was able to produce good crops of Onions scarcely injured by the maggot.

I stated at the lecture referred to that I have, during the past autumn, visited many hundreds of gardens and allotments in which more than ninety per cent. of the Onion beds had been greatly injured by the pest, and the comparatively few good uninjured beds I met with were all either from February sowings, or had been transplanted from sowings in the autumn. I was careful to state that I did not believe there was any nostrum we could use—soot and lime, or anything else—by the sowing of which we could obtain immunity from the insect without good cultivation throughout, and I stated minutely what that good cultivation consisted of; but your correspondent now says, "We want to get a little farther." I trust he will succeed in so doing; certainly his own contribution fails to carry us "any farther."

I will now, as briefly as I can, describe the method of cultivation I recommended as from my own experience and observation being likely to lead to success. In October or November a good dressing of farmyard manure at the rate of not less than 25 tons per acre, should be spread over the land, then digging deeply, keeping a good open trench and placing the manure well at the bottom of it regularly as the work proceeds, also throwing up the surface soil open roughly for the winter. About the middle of February this land to be again dug or forked over, but not deeply enough to bring up the manure to the surface, selecting a dry day for the work. Immediately this digging or forking is done, spread freshly slaked lime over the ground, a bushel to each rod, and then at once tread the whole surface evenly and thoroughly, thus affixing the lime in the upper crust of the soil. Next sow thinly in shallow drills 9 inches apart. Tread in the seed by running the feet along each side of the drill, then rake the ground, but not taking off all small stones, as this causes early encrustation of the surface.

As soon as the young plants can be seen go amongst them with a very small hand hoe, and lightly scratch over the soil just sufficiently to destroy the small weeds and to break the crust forming on the surface. Repeat this hoeing in about three weeks, and again at least twice more at similar intervals. Follow each of the successive hoeings with light dressings of soot. The soot coming in contact with the lime yields ammonia, the smell of which wards off the fly so long as the fumes continue. The

growth of the young plants is also pushed along rapidly. Thus two good objects are attained by the early and repeated hoeings and successive soot sprinklings.

Early thinning also is advised where thinning is found necessary. Late thinnings, as frequently practised, often invite maggot attacks by exposing the most tender part of the plants to the enemy, while the root disturbance checks the growth of the Onions. The fly unquestionably goes to the weakest plants and weakest parts, hence the necessity for early sowings and good cultivation throughout, to push along growth in order that the plants may form a stout maggot-resisting outer covering by the time the fly appears for depositing eggs. Hand-weeding ought never to be necessary, the weeds being kept down easily and efficiently by early and frequent hoeings; if they are allowed to grow they exclude air from the stems of the young Onions, which are made tender in consequence, and easily pierced by the newly hatched maggots.

As a further reply to "W. S. E.," I would inform him of an excellent method of providing small plants for the fly to deposit its eggs upon. Sow the main bed early in February as above advised, and cultivate likewise, then in the latter half of March sow a few rows thickly near the same; the later plants will almost surely be badly infested, to be eventually cleared away, and the ground planted with some other crop. As proof of this I will cite a case which came under my own observation last season. A clergyman of this county (Norfolk) sowed half of a large bed early in February, and the remaining half about the middle of March, treating both portions alike in other respects, and cultivating both well. Results: Those from February sowing were a full and remarkably fine crop, quite uninjured by the maggot. The March-sown portion on the other hand was almost entirely destroyed by the enemy.—W. K. W.

[Our correspondent is the last man to "shroud" his practical teaching in a "haze of long names;" at the same time, he will admit that "W. S. E." has been the means of eliciting valuable information, including that supplied by "W. K. W." The "appeal" added one more instance to the many of questioners becoming educators by calling forth experience that must be of service to many, and which would otherwise have remained dormant. We have placed eggs of the Onion fly on the tender stems of young plants, also at the same time on the hardened stems of autumn-sown Onions. The resulting maggots entered the former with the greatest ease, but perished in the attempt to penetrate the latter. Let others try this simple experiment during the ensuing season. We have other communications in hand.]

THE GLORY OF THE SNOW.

IN a recent note on hardy flowers I spoke of the *Chionodoxas*, and now that some of the other varieties are in bloom a short space may perhaps be profitably devoted to them. In speaking of the little patch in the centre of *C. sardensis* I was unaware that some of the flowers of this species do not exhibit this feature. The Rev. C. Wolley Dod very kindly sent me some blooms of the typical *C. sardensis* from his garden, and these were not only blue to the centre, only the anthers showing white, but the blue was much finer and more intense than any of my flowers. By the same post I received a letter from Mr. Whittall, the discoverer of *C. sardensis*, in which he said he wished to know if the "dark-eyed" variety had shown this feature, as he had a suspicion that it was the result of the soil. That morning one of the flowers of this "dark-eyed" variety opened, and, so far from exhibiting a dark spot in the centre, showed a small white eye or patch. A few days ago one of my correspondents in this country wrote me that some of the *Chionodoxas* with "smoke coloured" eyes had opened. This appears to be another instance of what has been observed with some plants, the soil and situation affecting them in several ways. I should be glad to hear from any grower of *C. sardensis* regarding their experience of this.

The changes effected by soil or situation may perhaps be accountable for the differences of opinion regarding *C. tmolusi*, another "Glory of the Snow" found by Mr. Whittall, many growers regarding it as the same as *C. Luciliae*; one firm, indeed, withdrawing it from their lists until its distinctness was proved or disproved. Writing in the *Journal* last spring, I said that I considered it distinct, as it was much brighter in colour. My bulbs were not from Mr. Whittall direct, but from a dealer who obtains bulbs through him, and in writing Mr. Whittall lately I stated my opinion, which, I am glad to know, is confirmed by that gentleman, who says—"I am glad you see the difference that exists in *tmolusi*, as it appears to me that others have been slow in recognising it. There is no manner of doubt in my mind that it will eventually be acknowledged to be a distinct variety." This season *C. tmolusi* has again flowered, and, after careful examination and comparison with

C. Luciliae of many shades of colour, I feel confident that they are distinct from a garden point of view, although not so from a botanist's view. The true *C. tmolusi* will be found brighter in the garden than *C. Luciliae*.

One of the latest additions to the Glories of the Snow is *C. Alleni*, also one of Mr. Whittall's discoveries, and named in honour of Mr. James Allen of Shepton Mallet. This I flowered last year, but when asked my opinion by Mr. Allen, I confessed myself unable to give one founded upon the flowers then to be seen. They appeared very like those of *C. grandiflora* (syn. *gigantea*), but more starry in form. All the *Chionodoxas* improve very much when established for a time, and now that *C. Alleni* has become established one can see that Mr. Whittall was justified in thinking it the finest of the Glories of the Snow. In my garden it is larger and brighter than *C. grandiflora*, and my few bulbs are, as I write, showing most beautiful flowers, the starry appearance having given place to well-formed broad petals. No doubt many growers of the *Chionodoxas* for the first time are disappointed with the flowers, but in time this disappointment will give place to delight at their beauty. Another break in the *Chionodoxas* has appeared this season in Mr. Allen's garden. This is a seedling with maroon-coloured anthers. It is impossible to forecast the future of the Glories of the Snow, but there is little doubt that their being brought together in our gardens will lead to endless crossing and intercrossing, which with flowers so free in seeding as these will give us many varieties of form and colour.

Since writing the foregoing a letter has reached me from another correspondent, an excellent botanist and a large grower of hardy flowers. He says that nearly all the flowers of the "dark-centred" *C. sardensis* have the anthers diseased with a growth like smut in Wheat, and that this gives the flower a darker appearance in the centre, but that there is no darker colouring on the patch.—S. ARNOTT.

ALARMING INCREASE OF THE CURRANT BUD MITE.

IT is with no wish to pose as an alarmist to placid and comfortable fruit growers that I draw fresh attention to the rapid increase of that insidious Black Currant pest, *Phytoptus ribis*, but it is certain that if some of them do not rapidly arouse themselves it will have established itself so firmly that no easy and economical means of riddance will suffice. Although the amount of damage done to Currants this year will be enormous, very little attention appears to be paid to the cause. When birds clear off the buds there is a vigorous outcry against the feathered marauders, but the far more serious operations of the mite are passed over unremarked. If this general apathy continues much longer the enemy will be as firmly established as the Potato disease, and, although the Currant crop is not of course so important as that of the noble tuber, it would be a calamity if the bulk of it were lost.

There are several points of interest to be noted in connection with the Currant *Phytoptus*, and one of the most important is its more marked partiality for one variety than others. That sort, by an irony of fate which market growers will fully feel the keenness of when they find time to turn their attention to the matter, the one which is far the most extensively cultivated for sale. So far as my observation goes, Baldwin's is the Black Currant which possesses the negative quality of attracting *Phytoptus ribis* the most strongly; indeed, in a series of observations carefully conducted in several different places, I have noted that where there is a selection of sorts grown Baldwin's practically constitutes itself the grazing ground of the enemy. Now, there might be a certain comfort in this were it presumable that with the variety named out of the way the mite would take itself off altogether, but its palate is not so dainty that it will refuse all food because its own particular delicacy is not there. Knowing as I do that the great market sort is a popular garden Currant as well, I think it likely that many gardeners as well as marketers may be in a position to say whether my observation in certain parts of Kent is borne out in other districts.

Another point of interest connected with the mite is its remarkable tenacity of life. As a result of some conversation with Mr. Butt, the very intelligent agent at Chilham Castle, he brought some mites for microscopic investigation. A very thin transverse slice had been cut from an infested bud with a sharp razor and isolated for a week, with two or three of the "maggots" clinging affectionately to it. Although their ardour must have sensibly diminished before the end of the seven days, for long ere the expiration of that time the slice was dried and shrivelled, they still showed unmistakeable signs of vitality, twisting and curving in a series of wavy undulations. Although there is no important practical deduction to be drawn from this pronounced reluctance of the pest to perish under adverse conditions, yet the fact points to a retention of vitality much greater

than that which distinguishes many other minute organisms, and leads to the opinion that simple methods of extirpation will not suffice.

A microscope of moderate power used under artificial light does not present the most favourable means of studying the pest minutely, and under such conditions it resolves itself into an organism bearing no distant resemblance to an Onion grub, but according to more complete observations it is a cylindrical body devoid of legs, except for two pairs situated close to the head. Its effects are more familiar. Its attacks may always be distinguished by the abnormal form of the buds. They lose their conical shape, broadening and becoming more cupped. Moreover, the even folding of the segments gives place to a more scale-like structure. There is no excuse for overlooking an attack, as these results are always palpable and prominent. Damage is done in the first place by the injury to the buds leading to partial or complete loss of crop, and subsequently by the dying of the shoots. When in Lincolnshire at Christmas I was shown some Currants stricken by a mysterious malady which proved to be the *Phytoptus*. A glance showed that the attack was a serious one, and on removing some of the shoots it was found that they were quite hollow, in fact the bushes were all but dead. The disease had been first noted three or four years previously, and a fear was expressed that it had spread to a neighbouring garden. Unfortunately for the other Currant growers in the vicinity it had spread, not in the neighbouring garden alone, but all over the locality, and had done immense damage to the crop. There is reason to judge that had the attack been allowed to come within the sphere of practical politics at first, and the shoots infested had been removed and burned, this widespread evil would have been averted.

Currant growers must awaken to the importance of dealing with this pest promptly and rigorously. If ever the good old adage of a stitch in time saving nine held good it would be in this case. The removal and burning of infested shoots brings down a just Nemesis on the head of the offender, reducing him to his elements and converting him into manure, while free applications of freshly slaked lime make assurance doubly sure. Those who are wise will not defer operations until they have an acre or two of Currants to destroy, but will begin while a few snips with the secateurs are sufficient to keep the liliputian destroyer in subjection.—W. P. WRIGHT.



ROSE SHOW FIXTURES IN 1894.

- June 27th (Wednesday).—Windsor (N.R.S.).
 „ 28th (Thursday).—Canterbury, Eltham, and Sutton.
 „ 30th (Saturday).—Sittingbourne.
 July 3rd (Tuesday) Farningham.
 „ 4th (Wednesday).—Croydon and Reigate.
 „ 5th (Thursday).—Hereford and Norwich.
 „ 7th (Saturday).—Crystal Palace (N.R.S.).
 „ 10th (Tuesday).—Gloucester and Wolverhampton.*
 „ 11th (Wednesday).—Hitchin.
 „ 12th (Thursday).—Bath, Harleston, Woodbridge, and Worksop.
 „ 17th (Tuesday).—Helensburgh.
 „ 19th (Thursday).—Halifax (N.R.S.), Halesworth, and Trentham.
 „ 21st (Saturday).—Manchester.
 * A Show lasting three days.

Any date of Rose shows, or of other horticultural exhibitions where Roses form a leading feature, not named above, I shall be glad to receive as soon as fixed, for insertion in future lists.—EDWARD MAWLEY, *Rosebank, Berkhamsted, Herts.*

FARNINGHAM ROSE SHOW.

WE have been obliged to alter the date of our Rose Show from the 27th June to the 3rd July. Kindly notify the same in your next issue.—STANLEY EDWARDES, *Hon. Sec.*

[This appears to be a second alteration (no doubt for the best of reasons), as the date we published last week was supplied through a member of the Committee, and received by us as we were preparing for press.]

N.R.S. NORTHERN AND SOUTHERN ROSE EXHIBITIONS.

“D., Deal,” discourses *more suo* and well in his letter to you, page 186, on the above and other topics. I propose to deal shortly with them, and then give your readers the result of a recently held Tea Rose election. I think that the Isle of Wight amateur “D., Deal,” refers to has fair cause for complaint if the N.R.S. has decided (“agreed to recommend” are the words used) on Gloucester for our southern show in 1895.

Gloucester is only thirty miles from Hereford where we held our provincial show in 1891, and it does seem hard on the real southern districts, as Gloucester is more a western than a southern city, if the Isle of Wight and all the southern towns are to be passed over for a second show within four years in the same locality. Is it not premature for the N.R.S. to decide on next year's shows nearly twelve months in advance of the time, and without giving a hearing to other claimants for the distinction of holding a Rose meeting in conjunction with our Society?

In one of your contemporaries, Mr. Pemberton, to whom the credit of this new departure is due, says in his opinion that the southern meeting seems intended for towns more or less south of London. I am not in his confidence, so cannot say whether by this he inferentially disapproves of the Gloucester fixture, but it would appear so. I think that the Isle of Wight being quite a *terra incognita* to most rosarians who are exhibitors, but a truly delightful place, would be a far preferable meeting ground in 1895 for the southern show.

CLASHING OF SHOWS.

As a quondam cricketer and old member of the M.C.C. I take exception to the method in which “D., Deal” makes his comparison. By it a non-cricketer would think that all the fixtures arranged by the M.C.C. for four months sum up to the figure twenty. If “D., Deal,” added a cool 100 to his figures he would be nearer the mark, so that his statement as to the facility of fixing the dates of cricket matches and the difficulty of arranging Rose shows has not the point he would wish us to believe. I am still of opinion that if a proper effort were made, and, as I mentioned in my previous letter, the N.R.S. had the authority it should by now have achieved there could be no difficulty in arranging matters. The Reigate executive's action to Croydon has caused considerable annoyance, and will do our local Society harm, but it may also affect the Reigate support in another year if similar tactics are pursued. The Farningham Rose Society has, after considerable trouble in arriving at an alternative date, finally altered their meeting to the 3rd July, and the Sutton Society to the 28th June. In the same manner the Reigate Committee might still give way and benefit materially hereafter by their action.

QUEEN'S PRIZE FOR ROSES.

Of course, I do not know the views of the gentlemen who represent the trade on this question, but I am rather afraid that the saying, “Fine words butter no Parsnips” are truly applicable in regard to “D., Deal's,” handsome testimonial to the “generosity” of their “feelings.” However, the trade growers had not the chance given them to exhibit such a noble abnegation of self-interest, although, as I know absolutely from the gentleman who represented the Royal donor in regard to the settlement of this matter, there was no restriction placed on the mode of allocating the cup.

As to “D., Deal's,” assertion that the small grower has as good a chance as the big amateur, all I need say is that as a small grower I totally disagree with him, and am prepared to name six amateurs between whom the prize will lie, against whom the growers under 1000 have not the faintest shadow of chance. Such small growers as may attend the Windsor Show will not risk their best twelves in such a fruitless effort, and the competition will be confined to the larger growers. According to the season the result will be easily gauged within a week of the event; but as I say, it will rest between six of the great amateurs.

THE BEST EIGHTEEN TEA ROSES FOR EXHIBITION.

As a supplement to the election for the best twenty-four H.P. Roses, published on page 162, I invited the co-operation of the following well-known rosarians to an election of the best eighteen Tea Roses—viz., Messrs. E. M. Bethune, H. A. Berners, F. R. Burnside, S. P. Budd, J. Burrell, B. R. Cant, F. Cant, A. Dickson & Sons, A. Foster-Melliar, A. Hill-Gray, G. E. Jeans, E. B. Lindsell, H. V. Machin, G. Mount, O. G. Orpen, A. Prince, and D. Prior & Sons. They were all good enough to respond to my request, and in the result sent a total selection of thirty-one varieties of Tea Roses; of these twenty were placed, the last four being bracketed equal. The eighteen available votes were given in the following order:—

Catherine Mermet	Ernest Metz	} 14 votes.
Comtesse de Nadaillac ...	Madame de Watteville ...	
Marie Van Houtte	Madame Hoste	
Souvenir d'Elise Vardon...		
The Bride		
Anna Ollivier	Niphotos	} 12 "
Hon. Edith Gifford	Souvenir d'un Ami	
Innocente Pirola		
Maréchal Niel	Cleopatra	} 10 "
Ethel Brownlow	Francisca Kruger	
Madame Cusin	Rubens	
	Souvenir de S. A. Prince	

The above formed the best twenty varieties in the opinion of the electors, whose names will be generally recognized as those of the leading exhibitors of Tea Roses in the kingdom. The Roses *proxime accesserunt* were Caroline Kuster and Princess of Wales, eight votes. Of the others, Madame Lambard got six, Jean Ducher two, and the following only one vote each:—Comtesse Panisse, Devoniensis, Etoile de Lyon, La Boule d'Or, Madame Bravy, Madame Berard, and Medea.

I think it is worth mentioning that the vote for Medea was sent by Mr. Frank Cant, of whose selection of this variety, even if he be alone in his opinion, it is worth while taking a mental note.—CHARLES J. GRAHAME.

NORTH AND SOUTH.

I FIND I misunderstood Mr. Astley about the Madame Berard referred to on page 162. I thought the plant was grown on the side of the wall facing south. I was mistaken, it seems, as it faces N.N.E. In pointing out the advanced state of vegetation in the west I hope I have hinted to those responsible for drawing a county line of demarcation longitudinally across England and Wales, separating the northern from the southern zone for National Rose Exhibition purposes, that they ought to consider the state of vegetation from east to west as well as from north to south, for I presume that the Northern Provincial Show of National Rose Society will be held in the northern counties in July and the Southern Provincial in the southern counties in June. It seems to me that it will be necessary to strike an average between eastern and western states of vegetation at the same date in the Rose season before we can fairly decide which ought and which ought not to be northern or southern counties; *i.e.*, provided that the county line of demarcation is drawn as straight as possible from east to west, and I think it should be.—H. V. MACHIN.

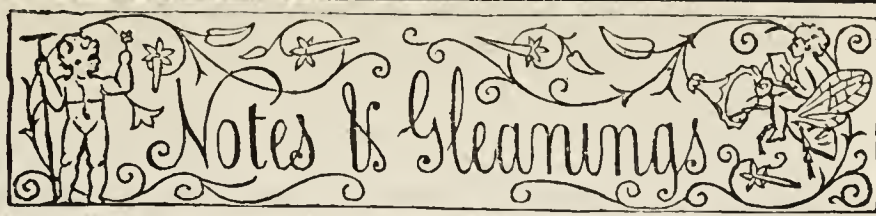
OBSERVATIONS ON ROSES.

THE past open winter has been favourable to Roses, notwithstanding its sudden tempestuous eccentricities and frequent deluges of rain: The queen of flowers promises to be considerably earlier than usual this year if the crucial element of frost—a consummate artist, but also a terrible destroyer—does not intervene. Mr. Benjamin R. Cant of Colchester wrote to me fully a fortnight ago that there were shoots on his Rose trees nearly 4 inches long. About the same time Mr. Cranston of Hereford informed me that many of the Roses in his large cool conservatory were coming into bloom. It is to be hoped that what remains of the spring will prove propitious, and that we will not have too many “afflictive visitations” of east and north winds, which when they come swooping down like elemental demons upon our beautiful gardens, bring desolation in their train. Nature never does betray the heart that loves her, save when she brings such messengers as these. The pious Æneas, immortalised by Virgil, suffered considerably less from their sudden onset than does the modern rosarian when his fairest treasures are thus taken by surprise. But not seldom the season of bloom is as exacting in its influence, and as tragic in its issues, as the period of growth.

Last summer has been eulogised by several eminent writers on Rose cultivation, I have never heard it blessed by any rosarian. So far as I know the great Rose cultivators are unanimously of opinion that their Roses suffered greatly from the scorching, unmitigated, solar blaze of the tropical summer of 1893. It has been asserted by a very few horticultural journalists that certain dark Roses during that memorable season were at their best; such, however, was by no means my experience with such varieties as Victor Hugo, Reynolds Hole, and Sir Rowland Hill. With these and many others, systematic watering did no good. Their exquisite complexion was, during the terrible heat of the summer, entirely destroyed, nor was it recovered till late in the autumn, when the henigaant coolness, characteristic of that season, providentially intervened.

On the other hand it must be admitted that many of the lighter coloured varieties, in my own garden at least, produced magnificent blooms. Early in the season, before they had experienced the full heat of July, the flowers which appeared on La France, Duchess of Bedford, Magna Charta, White Lady, Sir Garnet Wolseley, Margaret Dickson, Etoile de Lyon, and Belle Lyonnaise were marvellous to behold. But meanwhile these Roses were receiving artificially those essential, periodical supplies of moisture which Nature, their unnatural parent, most mercifully denied. But what, contemporaneously, was the experience of the southern English rosarians, whose acres of Roses were roasting in the sun? This, their temporary reverses at the Crystal Palace, and the universal triumphs of those heroic northern cultivators, Messrs. Dickson of Newtownards, Messrs. Harkness, and Messrs. Cocker, whose Roses had a cooler atmosphere, and more assistance from the clouds, were eloquent to declare. Thus it was that the floral representatives of Colchester, Hereford, Cheshunt and Oxford had to take a comparatively subordinate place, while those of Bedale, Newtownards and Aberdeen reigned supreme.

I have only been speaking of Hybrid Perpetuals; in the department assigned to Tea Roses at the Crystal Palace Mr. Benjamin R. Cant achieved six premier distinctions. This fact appears very strongly to indicate that the season of 1893, while distinctly antagonistic to Hybrid Perpetuals, and especially to the darker varieties of these, was not altogether unfavourable to the growth and development of those beautiful Tea Roses, which are the most perpetual and floriferous we possess. What other “family” in colour, form, or delicate fragrance can be placed, unless at a great disadvantage, in comparison with these? I hope the day is not far distant when Comtesse de Nadaillac will not be deemed inferior to Gustave Piganeau, The Bride to A. K. Williams, or Catherine Mermet to Alfred Colomb, when the dimensions of a Rose, however exceptional or impressive, shall be reckoned of less importance than other endowments, too long under-estimated, if not absolutely ignored.—DAVID R. WILLIAMSON.



EVENTS OF THE WEEK.—The only horticultural event which will take place during the ensuing week is the Exhibition of spring flowers at the Crystal Palace on Saturday the 17th. Being a favourable season a good display should be forthcoming at this Show.

— THE WEATHER IN LONDON.—Changeable weather has prevailed in the metropolis since publishing our last issue. Friday, the 9th, was showery, but Saturday proved fine and bright. Showers were prevalent on Sunday morning, the same also applying to Monday and Tuesday. Many fruit trees are fast developing their blossom buds, some Pear flowers being almost expanded. At the time of going to press the weather is bright and sunny, but the wind cold.

— WEATHER IN THE NORTH.—There has been no improvement in the weather during the past week. With the exception of the 6th and the 8th, which were fine for the greater part, the usual wet has prevailed. There were 3° frost on the morning of the 7th, but a rather good day was followed by a very wet evening. Between Saturday night and the morning of Sunday a violent south-westerly gale raged for several hours, and trees and buildings have again suffered severely. Blinding showers of snow, sleet, and rain fell at intervals during the whole of Sunday and Monday. Tuesday morning was calm but cold and dull, and the barometer promises no change for the better.—B. D., S. Perthshire.

— WHINS AND FURZE.—It will be news to your Scotch readers, and a good few English ones I imagine, to learn from “M.” (page 184) that the Furze is a “Ulex” and the Whin a “Genista,” seeing that Ulex, Furze, Gorse, and Whin mean one and the same plant. What Genista does he mean? It can’t be the Broom. When Burns wrote in “Tam o’ Shanter”—“And through the Whins and by the cairn, Where hunters fand the murdered bairn,” he meant the Furze (Ulex), as any Scotch reader knows.—J. S. W.

— GARDENING APPOINTMENTS.—Mr. George Gregory, late of Fern Lodge, Bracknell, has been appointed head gardener to Lord Portarlington, Came House, Dorchester, Dorset. Mr. F. Conn has been appointed gardener to Capt. Winthorp, at Barton Court, Kintbury, in succession to Mr. W. Young. Mr. Conn has been foreman in the gardens for several years.

— SPRING FLOWERS are now abundant in the conservatory of the Royal Botanic Society, Regent’s Park, and produce a remarkably beautiful display. Azalea amœna, which was introduced to this country from Shanghai by Fortune in 1850, is well represented. It may be of interest to mention that the flowers of this distinct small-growing species differ from those of the indica type in having a calyx enlarged into the size and form of the corolla, and as it is also identical in colour, the plant appears to have a double flower.

— GARDENING AND FORESTRY EXHIBITION, EARL’S COURT.—The short notice which I sent you for publication is not quite what I intended, I therefore ask you to kindly substitute the following: It may interest some of your readers, particularly those who were awarded prizes at the above exhibitions, and who, like myself, have not had the pleasure of handling the money, to know that I intend with the support of other prizewinners to raise a fund to defray the expenses of a test case. I will give my £3 and shall be glad to receive promises of subscriptions from those interested.—FRANK CANT, *Braistwick Nursery, Colchester.*

— NEW WORK ON BOTANY.—Messrs. Jarrold & Sons have just published an interesting work entitled “Object Lessons in Botany from Forest, Field, and Garden,” by Mr. E. Snelgrove. Botany rightly taught is the most pleasurable of sciences; and the guiding principle adopted by the author in the preparation of his book—namely, that of using common objects for illustration of unknown characters and functions, not only arouses interest, but must impart a large amount of sound instruction. The book will be useful to teachers in elementary schools, and should be a means of opening pleasant paths to their young students.

— THE summer Exhibition of the AYLESBURY FLORAL AND HORTICULTURAL SOCIETY will take place on July 5th, and a Chrysanthemum Exhibition will be held on November 14th and 15th.

— WE are informed that the annual Show of the Fawsley and District Cottage Garden Society will be held on Monday, August 6th, when prizes will be offered for home-made jams of 1893 and 1894 made by cottagers' wives.

— DEVON AND EXETER HORTICULTURAL SOCIETY.—The next summer Show of this Society will be held on August 17th. A Chrysanthemum Exhibition will also take place under the auspices of the Society on Friday, November 9th, 1894.

— ANCIENT SOCIETY OF YORK FLORISTS.—We understand that this Society will hold exhibitions during the current year on April 25th, May 30th, July 4th, August 15th, September 5th, and on Wednesday, Thursday, and Friday, November 14th, 15th, and 16th.

— AN ADDRESS ON INJURIOUS INSECTS.—A few evenings ago Mr. J. R. Riddell, head gardener to the Earl of Carlisle, delivered to a large meeting of cottagers on his lordship's estate at Bulmer, near Castle Howard, an interesting address on insects injurious to fruit trees.

— SCOTTISH PANSY SOCIETY.—The Jubilee Show of this popular Society will be held this year on a day not yet fixed, and in view of the interesting fact that it has existed for so long a time, is desirous of obtaining a liberal and an early response from admirers of this beautiful flower, so as to make the Show a large and attractive one. Mr. William Mackinnon, 144, Princes Street, Edinburgh, is the Secretary.

— WOOLTON GARDENERS' MUTUAL IMPROVEMENT SOCIETY.—The second of the prize essays was read by the winner, Mr. F. Clark, on Thursday last, at the Mechanics' Institute, Mr. H. Middlehurst, the donor of the prize, presiding. The paper was on "Hardy Herbaceous Plants," and was admirably written. Mr. Middlehurst kindly offered to the Society a prize of 1 guinea for the best essay on "Hardy Bulbous Plants."—R. P. R.

— WILTS HORTICULTURAL SOCIETY.—At the annual meeting of this Society, held in the Council House, Salisbury, the Mayor (Charles Hoskins, Esq.) presiding, the Assistant Secretary, Mr. H. Nicholson, read a letter received from Mrs. Walter Henry Williams, feelingly acknowledging a letter of condolence which the Committee at its previous meeting caused to be addressed to her on the occasion of the lamented death of her husband.

— DAFFODILS AND DRY SUMMERS.—A Gloucestershire correspondent tells me that Daffodils are going to flower badly with him this year, whole clumps showing no flowers. The drought last summer was very severe in that neighbourhood. Can any readers of the Journal speak of a similar experience? In my garden the Narcissi will flower as well as usual, but although the weather was drier than usual we did not suffer so severely as many places did.—S. ARNOTT.

— RED SPIDER ON GOOSEBERRY BUSHES.—As "A. D.," page 184, while admitting that it is quite right to "warn growers" against this enemy, yet politely holds me up to derision as having "insects on the brain." I thought that everyone would understand that the object of catching the red spiders on the cloths was to prevent their ascent and to prevent the "good cultivation" recommended by "A. D." of forming a quagmire under each bush by turning over the saturated ground, as I formerly did and now avoid. I am always ready to learn, but find nothing in "A. D.'s" note which I did not know before, except the remarks already alluded to.—JAMES HIAM, *Astwood Bank, Worcestershire*.

— PRESENTATION TO THE BALTIMORE UNIVERSITY.—Captain John Donnell Smith has signified his intention of presenting to the Baltimore University his valuable botanical library and herbarium, as soon as a suitable building shall be offered for their reception, and provision made for their maintenance in connection with a department for instruction and original work in botany. They are already open to students in botany at the University. The herbarium is one of the largest and best selected private herbaria in existence, and is especially rich in the flora of Guatemala and other parts of Central America, where Captain Donnell Smith has made large collections himself, including a great number of new species and some new genera. This indefatigable collector has again started on another visit to Central America.—(*Nature*.)

— RICHMOND HORTICULTURAL SOCIETY.—A complimentary dinner was given to Mr. J. H. Ford last week, on his retirement from the secretaryship of this Society, in recognition of his valuable services. He is succeeded in the office by Mr. Capel Smith.

— PRESENTATION.—Mr. W. Brown, after many years' service in the establishment of Mr. Thomas Rochford, is leaving to take a nursery of his own. A watch, by Benson, subscribed for by his fellow workmen, and bearing a suitable inscription, was presented to him last week in token of their esteem.

— ASTWOOD BANK HORTICULTURAL SOCIETY.—At the annual dinner of this Society (W. E. Perkins, Esq., in the chair), the Secretary, Mr. H. Woodward, submitted a statement of accounts, showing that the income for the past year had been £100, and the expenditure, including £7 to the Birmingham hospitals, £90, leaving a balance of ten guineas to the Society.

— CITRUS TRIFOLIATA.—This Japanese plant does not appear to be generally cultivated in gardens. It is quite hardy in the neighbourhood of London, and during the early summer bears a profusion of white fragrant flowers. The leaves are bright green, and the branches are covered with long sharp spines. In habit of growth the plant is dwarf, and it will thrive in any ordinary garden soil.—C.

— WE learn from an American contemporary that one of the beautiful trees on the grounds of the United States Botanic Garden at Washington is a Wahoo, *Ulmus alata*, which even in the winter season has a peculiar grace on account of its very slender branchlets. A little more than 7 feet from the ground the trunk divides regularly into branches which spread over a circle 60 feet in diameter. The tree is 55 feet high, and its trunk girths 5 feet at 2 feet above the ground.

— HIBBERTIA DENTATA.—This beautiful old greenhouse evergreen twiner, studded as it is at this early part of the year with its bright yellow flowers, is the source of great admiration. When trained under the rafters of a greenhouse by means of three or four wires it seems to be quite at home, and attains a great length in the course of a few years, even if allowed but very limited root room, provided watering be carefully and judiciously done. Loam and peat seems to suit it.—J. S., *Grimston*.

— NASTURTIUM FOR WINTER SALAD.—A correspondent of "American Gardening" "finding some chance seedling Nasturtiums in his greenhouse, allowed them to grow, which they did with a will, sending out long slender vines and tendrils and producing a rank growth of light colour. These shoots were tried as a salad, and everybody who tasted it seemed to want more of this cress. We should welcome Nasturtium, with its pleasant pungency, as a desirable addition to our rather limited list of profitable greenhouse crops and salad materials," and as Nasturtium (*Tropæolum*) leaves are commonly used as cress in some parts of England.

— SHORTHAND FOR YOUNG GARDENERS.—Your correspondents, "W. P. W." and "F. D." (pages 123 and 190), are apparently in doubt as to the advisability of recommending young gardeners to learn shorthand. To a certain extent I agree with them that the time required to become an expert in the "winged art" might be more advantageously employed by garden assistants. That some gardeners have derived benefit from it there can be no doubt, and in my own case it has proved specially useful. At Southampton Show last August, too, I noticed on the prize-winning cards of a well-known exhibitor some phonographic characters, which to many gardeners were probably as indistinct as Egyptian hieroglyphics, but were readable to—PHONO.

— CAMELLIAS.—Showy as all Camellias are at the present time of the year, there are many varieties occupying space that might be better utilised with choicer sorts. Amongst the best may be mentioned Chandleri elegans. There are two plants here of this exceedingly fine variety which have been for some time past, and are at the present time a "perfect picture" with their large pink flowers. One of these plants is about 8 feet in height, growing in a pot 18 inches in diameter, on which I counted close upon eighty expanded blooms, to say nothing of what had been cut and buds that are yet to open. These plants have been liberally treated with Standen's manure. This variety when not in flower stands out conspicuous among the rest, particularly so when the foliage, which is so handsome is kept clean. Other showy varieties are Duchess of Westminster, very handsome with extra large flowers; Beali, Mathotiana rubra and alba, the old imbricata, Jubilee and alba plena.—J. S., *Grimston*.

— THE results of botanical studies carried on at the University of Minnesota are to be reported in a serial, which will be published under the title "Minnesota Botanical Studies," edited by Prof. Conway M'Millan.

— ROSYDANDRUMS.—The note from Mr. Weathers (page 182) reminded me of another rendering of Rhododendrons given by an old woman when speaking to me some time ago. This was "Roderydandrums." Just an hour or two ago I heard a young man speak of "Rosydendrons."—S. ARNOTT.

— THE number for March of the "BOTANICAL MAGAZINE," just received by us, contains the following plates:—*Thomsonia napalensis* (an Aroid), *Hydrophyllum longiflorum* (insect-harboursing Rubiaceus plant), *Hippeastrum brachyandrum*, *Phychospermia elegans* (East Australian Areca), and *Pelargonium Drummondii* from West Australia.

— PRIMULA JAPONICA IN POTS.—This strong-growing *Primula* is well adapted for the embellishment of greenhouses and conservatories during the spring months when cultivated in pots. A friend of mine grows a large number of plants for this purpose, and finds them exceedingly useful. They are placed in 5 or 6-inch pots in the autumn, and kept in a cold frame during the winter, placing them in the greenhouse early in March. There they soon commence to produce their tall flower spikes, and the blooms remain in a good condition for a considerable period.—B. T.

— THE SHIRLEY AND DISTRICT GARDENERS' AND AMATEURS' MUTUAL IMPROVEMENT SOCIETY.—At a meeting of this Society held in the Parish Room, High Street, Shirley, on Wednesday 7th instant, Mr. E. Molyneux, Swanmore Park, gave a lecture on "The Salient Points in Hardy Fruit Culture." Treating his subject in a masterly and concise manner, the lecturer finished with the assertion that the most important item in fruit culture was brains, and he might have added plant culture too. A brief and interesting discussion followed, after which Mr. Molyneux was accorded a hearty vote of thanks for his instructive and interesting lecture.

— LOUGHBOROUGH AUTUMN CELERY AND VEGETABLE SOCIETY.—The twenty-third annual meeting of this Society was held on Wednesday evening, 7th inst., in the Mayor's Parlour, Town Hall, the Mayor (Ald. W. A. Cartwright) presiding. The balance-sheet showed receipts £107 17s. 7d., and expenses £101 12s. The Mayor, in moving the adoption of the report and balance-sheet, congratulated the members on the excellent position attained. The Society, he said, had done much to encourage the working men in the cultivation of vegetables, and he thought great credit was due to them for the time they devoted to preparing the exhibits.

— A NEW MANURE.—Not literally, but metaphorically, your esteemed contributor Mr. Molyneux has, at a gardeners' improvement society, been advocating in fruit culture the use of brains. Let not readers, however, start back in horror at the suggestion. He means nothing physical, nothing shocking; there is no suggestion on his part that brains, whether human or otherwise, should be literally employed as manure. He simply means that sense, intelligence, knowledge, all of which are ordinarily comprised in the expressive term "brains," should govern and control fruit culture, as indeed all things relating to gardening. The suggestion is not new, of course, but it is essentially correct. We want in all our gardening far more intelligence and less rule of thumb. Even to-day, with the boasted nineteenth century nearly at its close, we in gardening perform an immense deal of our work by rule of thumb methods; we still do what our fathers did very largely without having thought in any way of first principles, or inquiring why or wherefore this or that labour is so performed. That some awakening of the garden intelligence is taking place now there can be no doubt. Gardeners' associations, one of which Mr. Molyneux practically inaugurated the other day, are doing much to arouse dormant intelligence and awaken interest. The county councils are also doing much. The Press has long striven to do something also; but the result is slow in appearance. If our young men would but use to the utmost the facilities now offered to them, we should find the next generation to be employing brains in much greater degree than is found at present. Their position then very much rests with the use they make of their time now. True, gardening is a poorly paid occupation, and the only hope of bettering it financially is found in the higher intelligence of those who shall be its workers.—A. D.

— THE KEW BULLETIN.—We have to acknowledge the receipt of "The Kew Bulletin" for March, which, as usual, contains some interesting matter. The contents include articles on the "Sugar Cane Disease in Old World;" "Seminal Variation in the Sugar Cane;" "Improvement of Sugar Cane by Chemical Selection of Seed Canes;" "Guzerat Rape;" "Agriculture in British Honduras;" "Decades Kewenses VIII.;" "Artificial Production of Citric Acid;" and some miscellaneous notes.

— SCOTTISH HORTICULTURAL ASSOCIATION.—The usual monthly meeting of this Society was held at 5, St. Andrew Square, Edinburgh, last evening, Mr. James Grieve, Pilrig Park Nurseries, Vice-President, in the chair. Mr. S. Johnston, Sillerbithall, Hawick, read a practical and carefully prepared paper on "The Vegetables of To-day: How to Grow Them, and How to Judge Them." At the close, after some discussion, Mr. Johnston was deservedly awarded a cordial vote of thanks for his excellent paper.

— WAKEFIELD PAXTON SOCIETY.—The seventeenth annual meeting of the members of this Society was held on Saturday night, 3rd inst., when Mr. H. S. Goodyear presided (Mr. G. Gill being Vice-Chairman) over a large attendance. Mr. T. H. Mountain, Assistant Secretary, read the annual report, and it is gratifying to see thereby that there is a balance in hand of £18 3s. 5d. During the year £8 1s. 7d. has been raised from sale of exhibits at the weekly meetings and special contributions, which sum is to be divided between the Gardeners' Orphanage Fund and the Gardeners' Benevolent Institution.

— DR. A. DODEL'S "Biologischer Atlas der Botanik" (Iris series), published by C. Schmidst, Zurich, contains as excellent a set of coloured botanical diagrams as it is possible to desire for teaching purposes. The collection comprises seven large wall maps, upon which sixty-seven figures of parts of *Iris sibirica* are depicted. The figures illustrate the root, stem, leaves, flowers, and fruit of the plant in an admirable manner, the magnification being stated in each case, and in accuracy of delineation and beauty of reproduction they could hardly be excelled. The whole of the illustrations are from original drawings contained in an unpublished monograph by Dr. Dodel.—(Nature.)

— READING AND DISTRICT GARDENERS' ASSOCIATION.—At the last fortnightly meeting of members Mr. J. Hudson of Gunnersbury read a very instructive paper on "Tender v. Hardy Plants in the Flower Garden." The subject was ably dealt with, and gave rise to a wholesome discussion. The interest of the meeting was greatly enhanced by a splendid collection of *Primulas* from Messrs. Sutton & Sons. About 200 were exhibited in twenty varieties, and though grown in pots not exceeding 3 inches in diameter the plants were models of culture, being well furnished with foliage, and bearing a profusion of beautiful blossoms. A cordial vote of thanks was unanimously accorded to Messrs. Sutton for their exhibit, and to Mr. Hudson for his essay.

— ABERDEEN HORTICULTURISTS AND THE PUBLIC PARKS.—At a recent meeting of the Links and Parks Committee of the Aberdeen Town Council, a memorial was submitted from horticulturists in Aberdeen with reference to the practice of supplying plants and shrubs from the public parks to the promoters of entertainments. The memorialists complained that this custom, as well as the practice of supplying private parties with flowers, deprived them of a considerable amount of revenue, and expressed the hope that the Council might see their way to adopt measures which would put a stop to plants being given for decorative purposes from the public gardens. In the course of the discussion which ensued, a member contended that the public parks, instead of being any drawback to the business of the florists, had had the effect of increasing a taste for the rearing of flowers, and we suspect he was right. Not many years ago, it was stated, very few people cared to have plants in their houses, but now many citizens had them, but the Aberdeen florists allowed strangers to come into the field, who disposed of thousands of plants annually. The park gardeners, it was contended, showed people what plants to grow, and how to grow them, and the business of the florist had thus increased. Not many years ago, it was argued, a few hardy flowers might have been seen for sale in the Aberdeen New Market, but now they might be found in abundance in every florist's shop in the city, the reason being that the keepers of the public parks had cultivated the public taste. After further discussion it was remitted to a Sub-Committee to meet the memorialists, with view to having an interview in regard to the subject of their petition, and to report.

— **BULBS AT THE GRASSENDALE SHOW.**—On Saturday last, the 10th inst., the fourth spring Show of the Grassendale and Aigburth Horticultural Society was held in the Parish Room of the former place. The Liverpool spring Show having been abandoned this year, many of the exhibitors came to Grassendale. The bulbous-rooted plants were of the highest order, more especially the Hyacinths and Tulips. The former were magnificently shown, the examples of three bulbs in a 6-inch pot being extraordinary, rivalling those shown of one bulb in an equal-sized pot, and leading one to suppose too large pots are often used for Hyacinths. Messrs. Kelly, Agnew, Grant, Leadbetter, Madeley, Lewis, Bounds, Bryan, Ankers, Harrison, and Field were amongst the chief prizewinners.—R. P. R.

— **THE QUINCE RUST.**—It is important to know that the Quince rust grows in one form upon another plant, for it is possible to check its ravages by diminishing the chances of its being able to find a Cedar upon which to live. So far as we know it seems likely that if the Cedars were absent the rust of the Quinces would not be present. The Quince stage of the rust is not confined to the Quince, but thrives upon the Apple and Hawthorn, the latter serving as a breeder for the troublesome parasite in the hedgerow and wood lot. The rust that is now under consideration is quite different from the many moulds, mildews, and blights that prey upon our crop plants, and may be held in check with fungicides. The rusts proper, of which there are many hundred kinds, are deeply seated gross-feeding fungi, and usually have done a large portion of their mischief before observed. There is but little doubt, however, that spraying might be effective if the time was known when to do it. This would mean the application of the fungicide to the Quince trees at the time, or just before, the spores are mature upon the Cedar nodules. A better way, however, seems to be found in the removal of Cedars from the vicinity of Quince trees. As another Cedar gall fungus is associated with the rust of the Apple, it is all the more important to separate the Cedars from our orchard fruits, to prevent these diseases.—("American Agriculturist.")

— **FOREIGN VEGETABLES IN AMERICAN MARKETS.**—Among the vegetables in American markets now are Cabbages from Denmark, which sell wholesale for 10 dollars a hundred heads. These heads are much more firm and heavy than any home-grown Cabbage, although the native product is said to be sweeter. Beautiful new Potatoes have been coming from Havana for a week, and bring 6 dollars a barrel; old Potatoes from Bermuda bring the same price. Scotch Magnums still sell at higher prices than our native Potatoes, being of larger size, more regular in form, and more evenly selected. They are considered better than the Potatoes from either England or Ireland, but not so good as those from Germany. At present prices, which are one-third less than they were last year, after the cost of sacking, transportation, and duty is deducted, the returns to the Scotch dealer can be hardly more than 50 cents a barrel. Last month 40,000 sacks of these Potatoes arrived, but the market is so dull that many of them are still kept in storage. From France we are receiving Brussels Sprouts at 25 cents a pound, and Cauliflowers at 40 to 50 cents a head. Corn salad and Chives from the south make the markets green. Florida is sending Beans and Peas, the last of which command as much as 8 to 9 dollars a bushel crate when of the first quality. Apples still remain scarce, although they are held in considerable quantity in the interior. Northern Spies, Baldwin, and Greenings bring 6 dollars a barrel, while it is hard to get Kings even at 8 dollars a barrel.

— **NEW POTATOES.**—The well-known French horticulturist, Mons. de Vilmorin, has recently made to the Société Nationale d'Agriculture de France a very interesting communication upon some recent Potato-growing experiments. The exceptional dryness of the summer of 1893 made itself felt upon the Potato yields as well as upon most of the other crops. He mentions, says a contemporary, in connection with his experiments a new Potato—the Czarine—which is believed to be a French variety. This Potato, presented for the first time under a circumstantial name, has been tried for two or three years in the neighbourhood of Paris. In two localities at least it made a certain local reputation, and was known as the Parisienne and the Belle de Wissons. It is a very vigorous plant, with high and strong stalks, late, and giving large square-shaped tubers, more flattened than round, having the eyes hidden at the bottom of the cavities, which are rather deep, a dark yellow skin, with red spots round the shoots. The flesh is yellow, close, floury, and very eatable, without being delicate. The cultural experiments made in 1893 upon this new variety show it to be exempt from two great failings of the Emperor—viz., irregular growth and difficulty

of keeping. The first place taken in the trials is taken by the Géante Sans Pareille, the yield of which was 12 tons 9 cwt. to the acre, the amount of fecula being 15·8 per cent., while the Emperor, with 9 tons 15 cwt. to the acre, reached 20 per cent. of fecula. Mons. de Vilmorin indicates three new varieties of German origin, which have succeeded well—viz., Sirius, Fortuna, and Cæsar, which gave between 9 tons 4 cwt. and 9 tons 12 cwt. to the acre.

— **BOUGAINVILLEA SPECTABILIS.**—I can fully endorse the remarks of your correspondent respecting the above on page 184. There is a large specimen planted out in the intermediate house at Sandbeck Park, Rotherham. It is given ordinary treatment, and never fails to flower abundantly during the summer months. It is a pity it is not more generally grown.—B.

— **POLYGONUM COMPLEXUM.**—What a grand climber this is, either for the stove or intermediate house! It will succeed in almost any situation, its long, graceful, Fern-like foliage looking very attractive when the growths are allowed to hang in a natural manner. It is also very useful for table decoration. Planted in a mixture of loam, peat, and charcoal, a young plant covered a wall 12 feet by 5 last season, and is admired by all who see it.—BRAMLEY.

— **APPLES AS MEDICINE.**—Chemically, we are reminded in "Science Siftings," the Apple is composed of vegetable fibre, albumen, sugar, gum chlorophyll, malic acid, gallic acid, lime, and much water. Furthermore, the German analysts say that the Apple contains a larger percentage of phosphorus than any other fruit or vegetable. The phosphorus is admirably adapted for renewing the essential nervous matter—lecithin—of the brain and spinal cord. The acids of the Apple are of singular use for men of sedentary habits, whose livers are sluggish in action, those acids serving to eliminate from the body noxious matters which, if retained, would make the brain heavy and dull, or bring about jaundice or skin eruptions or other allied troubles. The malic acid of ripe Apples, either raw or cooked, will neutralise any excess of chalky matter engendered by eating too much meat. It is also the fact that such ripe fruits as the Apple, the Pear and the Plum, when taken ripe and without sugar, diminish acidity in the stomach rather than provoke it. Their vegetable sauces and juices are converted into alkaline carbonates, which tend to counteract acidity.

IRIS KÆMPFERI AND VARIETIES.

THE cultivation of these grand Irises is, I fear, very little understood in this country, and I refer to them because I recently had an opportunity of inspecting a large number of hand-painted illustrations of the Kæmpferi varieties made by Japanese artists. Mr. John Pope of the King's Norton Nurseries, Birmingham, is an enthusiast with these plants, and his large book of Japanese coloured drawings of native plants is of very great interest. He also imports and cultivates many of the Kæmpferi Irises. Some fifteen years since Mr. Pope attempted their culture in the ordinary way of planting them out in the nursery, but it ended in failure, and on getting information from Japan as to their requirements, he found that a wet situation was essential. In his private garden a few years since and subsequently I saw a trench prepared for some plants, where a supply of water could be kept up, in the drier weather especially. I called recently to see Mr. Pope, but as he was unwell failed to see him. He has, however, sent me the following particulars as to his mode of cultivation.

"My first experience with these Irises was about fifteen years ago when I was in London, and was advised to buy a few at Stevens' Sale Rooms. Although told by authorities on herbaceous and hardy plants that I should fail in growing them, I bought a dozen clumps and planted them in moist soil, but they did not succeed. I then made a ditch, and the overflow from the pump and washhouse was conveyed to it, and their growth was very strong, for I had also dressed them with a fertiliser. The second year they grew 5 feet high, and one sort, which Mr. Peter Barr called Mary Anderson, a white variety, produced flowers 10 inches in diameter. I divided this into twenty plants, and I find that when even covered with water during the winter it is in no way injured, thus proving it to be hardy in any winter. They are very partial to 'sock' and manure water, and thorough moisture is an absolute necessity. I have made a number of deep ditches in a low-lying meadow close to my garden, with the intention of considerably extending the culture of these Irises, and have received from Japan two cases of plants for my own growing, selected from drawings sent to me,

and as they are all large clumps I shall look out for some fine things when they are in flower. I believe that anyone having pools or supplies of water in their gardens could easily grow them and should try them,

I understand that at sales a great number of the plants are from Holland, and that it is advisable to obtain the Japanese importations of strong plants; the chaste markings of some of the flowers, their rich



FIG. 34.—IRIS KÆMPFERI.

but the plants do not flower well until they are strong. The small plants usually sold at sales require two to three years' growth before they bloom well."

colours and great size, will be a surprise to those who are unacquainted with this superb section of Flag Irises, as represented in the illustration, fig 34.—W. D.



THE HIGHGATE AND DISTRICT CHRYSANTHEMUM SOCIETY.

THE annual exhibition of the above Society will take place on November 1st and 2nd, 1894.

STOPPING CHRYSANTHEMUMS FOR TIMING THE BUDS.

I THINK Mr. H. Dunkin (page 188) will find the method I advocated on page 150 a much better way for timing the buds than the haphazard one of trusting to the crown buds coming at the right time by rooting the cuttings late, or depending on terminal buds. We will take the Queen family as an example. I maintain that no matter how well or strong the plants may be grown, the terminal flowers will be too small for exhibition purposes. I quite agree with him that they may be neat and well formed, but they will be lacking in size. By my system of stopping in March and April the crown buds can be made to appear at the right time, therefore southern growers need not depend on the terminal buds at all, but can have crown buds at the proper time by a system of stopping at different times, according to the district, whether it be late or early.

I am surprised that this question has not been discussed more fully, as I think it is one of the most important in the culture of the Chrysanthemum, and now is the time to consider it. Of course I do not advise the stopping of all Chrysanthemums, but only those which are known to be naturally early or late, the others are simply allowed to grow and break naturally. In regard to new varieties, until we grow them one season and find out their peculiarities we cannot tell which system will suit them. From my experience I am convinced that to get good flowers from naturally early or late plants fit for the exhibition table some such method as I recommend will have to be adopted. If any other grower who has tried the stopping system would give his experience it would be of great benefit to the lovers of the autumn Queen, especially at the present juncture, as it is now time for the operation to be put in force.—J. FERGUSSON.

JAPANESE CHRYSANTHEMUM ELECTION—WALES.

I HAVE read with much interest the correspondence that followed the election which lately appeared in your columns, but I have not seen any mention of the subject from Wales, so I beg a corner for a few remarks in case it may be thought that the queen of autumn flowers is not sufficiently appreciated in this part of the country. I consider the recent election as carried out through Mr. Molyneux very valuable, especially to growers situated as we are, far away from the shows and large Chrysanthemum nurseries, as they have not the opportunity of seeing the new varieties as they come out, but only the catalogues to go by, in which all the varieties are described as indispensable to the exhibitor.

I should certainly like to have seen the name of one or more of the prominent growers of Wales included in the election, for there are some good cultivators, as anyone attending the shows at Cardiff and Swansea the last two or three years can testify. The last year's show at Cardiff, in the opinion of those qualified to judge, would compare favourably with many of the largest shows in England. I have in my mind one grower who not only made himself prominent at Cardiff but also tackled Bristol, and was first in all the classes in which he competed. I believe as yet he has an unbroken record wherever he has shown. This I mention to show that Chrysanthemums are grown in Wales as well as the rest of the country.

I noticed one correspondent remarked that those who took part in the election did not in every case name those varieties they had actually grown, but some that they had seen on the show board, and thought that somewhat reduced the value of the election. Now, as they were not asked to name only those they had actually grown but that they considered the best, I think they did quite right, for the best of growers cannot have them all, and many of them who are exhibitors, and also act as judges, have opportunities of seeing some really good varieties which they have not obtained, but which they very soon see they must have. Take for instance such varieties as Robert Owen, Charles Davies, and Mille. Thérèse Rey, which only came out late last year. Many did not have them, but who would not try to get them after once seeing them on the show board? On this point I speak from experience. I was an exhibitor last season, and saw as soon as I looked round the show that I was behind simply in not having some of the new improved varieties. The blooms I had were pronounced excellent. I stood third in the forty-eight class, whereas if I had had some of the fine introductions of Japanese I should have stood higher, and my opinion was evidently the opinion of others who reported the show. For this reason I place great value on the election, as it gives us distant growers opportunities of knowing what varieties to procure.

As for Omega's (page 150) substitute for the election, I quite agree with "Amateur" that it would not be so valuable, for, leaving out the question of expense, I do not consider it would be so good a test growing all the varieties in one place under the same conditions of climate and

soil. Far better test them by growing them in different parts of the country under different climate, treatment, and soil, for it is a well known fact that varieties that will be most prominent in some districts will be quite the reverse in others. All the new varieties would make a grand show in London for those able to see it, but for the great majority of growers spread all over the country it would not be so valuable as the recent election, for which I have only one small objection, which I hope, if the election is again carried out next year, will be righted—that is, that I may see gallant little Wales recognised in the list of growers' names. I shall then consider it, as far as Wales is concerned, perfect.—SASSENACH.

[If our correspondent sends the name and address of the successful grower alluded to Wales will no doubt be remembered in future.]

ROYAL HORTICULTURAL SOCIETY.

THE meeting of this Society, held at the Drill Hall, Westminster, on Tuesday, March 13th, cannot be termed other than a success. The Orchids made a very striking and handsome display, some forms of exceptional merit being staged. Hardy flowers, including Daffodils, were shown in good form, and Clivias (*Imantophyllums*) formed one of the finest features of the Show.

FRUIT COMMITTEE.—Present: P. Crowley, Esq. (in the chair), with Rev. W. Wilks, Dr. Hogg, and Messrs. John Lee, H. J. Pearson, T. F. Rivers, G. Bunyard, G. W. Cummins, J. H. Veitch, P. Veitch, G. Taber, T. J. Saltmarsh, A. Dean, A. J. Laing, J. Willard, G. Sage, H. Balderson, F. Q. Lane, G. Wythes, W. Bates, J. Hudson, T. Glen, and J. Wright.

As is usual at this season of the year the duties of the Committee were light. The most notable exhibit was that of A. H. Smee, Esq., The Grange, Hackbridge (Mr. G. W. Cummins, gardener), of sixty dishes of Apples and Pears, all firm, clear, and altogether creditable, well meriting the silver Knightian medal that was unanimously recommended. Sundry Apples were placed on the table, the first dish being from Mr. J. H. Goodacre, Elvaston Castle Gardens. The variety was sent as Newtown Pippin, grown against a south wall, but some members of the Committee preferred regarding the Apple as the Winter Calville. A vote of thanks was accorded. Col. Bibby (gardener, Mr. A. Green), Bordon, Petersfield, sent a dish of large red Apples, supposed to resemble Grange's Pearmain, a serviceable culinary and dessert variety. Mr. Fry, Holmhill, near Carlisle, sent a dish of the Housewife Apple, large, firm fruits, and a favourite in the north, because of its good size and long-keeping quality (vote of thanks). Mr. Rivers sent a dish of the D'Arcy Spice Apple, better in quality than appearance. This is a richly flavoured late dessert Apple, perhaps worthy of more attention. It is not showy, but undoubtedly good (vote of thanks).

Mr. Allan, gardener to Lord Suffield, Gunton Park, sent a bunch of a black seedling Grape, the result of a cross between Black Morocco and Alicante. The berries are somewhat of the shape of those of Madresfield Court, densely coloured, and superior in quality to Alicante. The Vine is said to need a high temperature, and no award was made. Mr. G. Wythes, Syon House Gardens, sent a box of fruits of Strawberry Vicomtesse Hericart de Thury, good in size, and remarkably well coloured; also bunches of Asparagus, and a cultural commendation was accorded. A similar award was granted to Mr. Leach, Albury Park Gardens, for ripe fruits of Lady Bird Tomato from plants raised from seed in September; also Early Prolific Potatoes grown in pots in a vinery with the Tomatoes.

Messrs. James Veitch & Sons sent a large basket of Variegated Kales in choice variety, the colouration being varied and decidedly attractive. An excellent strain, and a vote of thanks was accorded.

FLORAL COMMITTEE.—Present: W. Marshall, Esq. (in the chair); Rev. H. H. D'Ombrian, Messrs. R. Owen, H. B. May, H. Herbst, R. Dean, E. Molyneux, G. Stevens, C. J. Salter, W. C. Leach, R. B. Lowe, C. Jeffries, W. Furze, J. D. Pawle, C. E. Pearson, C. E. Shea, J. Walker, T. Baines, G. R. Peerless, C. Beckett, H. J. Jones, J. T. Bennett Poë, E. Mawley, G. Paul, W. Watson, and G. Gordon. Messrs. J. James and Son, Woodside, Farnham Royal, staged a collection of magnificent Cinerarias. The form and colouration of the blooms were superb (silver Flora medal). A group of plants and cut flowers was shown by Mr. Wythes, gardener to the Duke of Northumberland, Syon House, Brentford. Particularly noticeable were *Datura cornucopia*, *Bignonia venusta* (splendid sprays) *Clivias*, *Crotons*, *Dracenas*, *Acacias*, and *Palms* (silver Banksian medal). Mr. J. H. Withy, Nunhead Cemetery, arranged flowers for table decoration with charming effect. A number of shrubs, splendidly flowered, of *Andromeda japonica* were exhibited by Mr. Anthony Waterer, Knap Hill Nursery, Woking (silver Flora medal). Mr. Newport, Hillingdon Heath, showed a group of *Primulas* and *Stocks* in fine condition (bronze Banksian medal).

The group of Daffodils and hardy flowers shown by Messrs. P. Barr and Son, King Street, Covent Garden, was one of the finest features of the Exhibition. Amongst the most prominent were *Narcissus bicolor* *Horsfieldi*, *N. Golden Spur*, *N. Queen Bess*, *N. Princess Ida*, *N. Sir Watkin*, *N. Countess of Annesley*, *N. poeticus ornatus*, and *N. incomparabilis* *Cynosure*, *Scilla sibirica alba*, *Chionodoxa sardensis*, *Sisyrinchium grandiflorum album*, *Hellebores*, *Megasea speciosa*, and hardy *Cyclamens* (silver Banksian medal).

Plants of *Streptocarpus Wendlandi*, grown from seeds sown in January, 1893, were staged by Messrs. Sutton & Sons, Reading (first-class certificate, see below). Zonal *Pelargonium Double New Life*,

and Carnation Mrs. H. Cannell, were shown by Messrs. H. Cannell and Sons, Swanley and Eynsford. A splendid group of flowering plants, including amongst others *Azalea mollis*, Lilacs, and *Clivias*, was exhibited by Messrs. B. S. Williams & Son, Victoria and Paradise Nurseries, Upper Holloway (silver Flora medal). Mr. Elliott, Stourvale Nursery, Christchurch, staged a very large plant of *Calla æthiopica*, also *C. Little Gem*, and *Freesias*. Messrs. J. Peed & Sons, Roupell Park Nurseries, Norwood, showed a group of handsome foliage plants, including *Caladiums*, *Dracænas*, Palms, and small Ferns (silver Banksian medal). Messrs. F. Sander & Co. exhibited plants of *Coleus* Mrs. F. Sander, which was accorded an award of merit (see below). Messrs. J. Veitch & Sons, Royal Exotic Nursery, Chelsea, showed a collection of *Clivias*, *Staphylea colchica*, *Rhododendron Niobe*, and *R. Ne Plus Ultra* (awards of merit, see below), and also a basket of *Azalea carminata splendens* (silver Banksian medal). Messrs. W. Cutbush & Sons, Highgate, N., exhibited a charming group of plants. Amongst the best of these were *Epacris*, *Ericas*, *Boronia*, *Dendrobium*, and *Cypripedium* (silver Banksian medal).

Messrs. B. S. Williams & Son showed plants of Japanese Camellias, comprising *The Mikado*, *Lady McCulloch*, and *Lady Mackinnon*. G. F. Wilson, Esq., Weybridge, showed a plant and blooms of blue Primroses, which possessed remarkable density of colour. The same exhibitor showed three seedling *Narcissi*. A plant of *Calla Pride of the Congo*, a yellow coloured variety with a small spathe, was shown by Mr. Bain, gardener to Sir Trevor Lawrence, Bt., Dorking. *Anthurium Rothschildianum compactum* was also staged by Mr. Bain. Splendid flowers of the Sutton Anemones were shown by Messrs. Hubert & Manger, Guernsey. An award of merit was accorded to Mr. W. Whiteley, The Nurseries, Hillingdon, for *Imantophyllum miniatum*, Hillingdon variety (see below). Mr. Leach, Albury Park Gardens, was deservedly given an award of merit for *Azalea albicans* (see below). Messrs. Veitch & Sons staged baskets of *Rhododendron racemosum*, *Shortia galacifolia*, and *Loropetalum chinense* (first-class certificate, see below). Messrs. J. & J. Hayes, Lower Edmonton, showed pots of *Primula sinensis* *Magnum Bonum*. Aldborough Anemone flowers were shown by Mr. Allan, gardener to Lord Suffield, Gunton Park, Norwich. *Vriesia Rex*, shown by Mons. L. Duval, 8, Rue de l'Ermitage, Versailles, France, received an award of merit (see below).

ORCHID COMMITTEE.—Present: H. J. Veitch, Esq. (in the chair); Dr. Masters, Messrs. Jas. O'Brien, De B. Crawshay, F. Sander, W. H. Protheroe, T. W. Bond, H. Ballantine, C. J. Lucas, R. Brooman White, T. Statter, J. T. Gabriel, H. J. Chapman, E. Hill, W. H. White, H. Williams, T. B. Haywood, W. Cobb, and S. Courtauld.

Messrs. W. L. Lewis & Co., Southgate, N., staged a handsome collection of Orchids. Particularly prominent were *Trichopilia suavis*, *Odontoglossums*, *Dendrobium*, *Cypripedium*, and *Phalænopsis* (silver Banksian medal). The group arranged by Mr. Cragg, gardener to W. C. Walker, Esq., Winchmore Hill, comprised *Cymbidiums*, *Dendrobium*, and *Cattleyas* (silver Banksian medal). One of the most charming exhibits amongst the Orchids was that from Messrs. B. S. Williams & Son. It included, amongst others, *Odontoglossums*, *Cypripedium*, *Dendrobium*, *Vandas*, *Cœlogyne*, and *Tricocentrum tigrinum* (award of merit, see below, silver Flora medal). A fine group of *Cymbidiums* *Lowianum* and *eburneum*, and *Cœlogyne cristata* was staged by Messrs. Collins & Collins, Cumberland Park Nurseries, Willesden Junction (silver Banksian medal). Messrs. H. Low & Co., Clapton, arranged a group of Orchids. *Odontoglossums* formed the prominent feature (silver Banksian medal). *Phalænopsis Cynthia* was also shown by Messrs. Low.

Messrs. Sander & Co. had a grand exhibit, including *Lycaste Skinneri* Mrs. H. Ballantine (award of merit, see below); *Cypripedium Rothschildianum*, *Phaius Marthæ*, a cross between *Blumei* and *tuberculosis*, awarded a first-class certificate, and will be found described below. *Cattleya Schröderæ*, *Phaius Cooksoni*, *Cymbidium Lowianum*, *Dendrobium Phalænopsis Schröderianum*, *Angræcum Sanderianum*, *Odontoglossums* and *Cattleya Trianae alba* (silver Flora medal). Messrs. J. Veitch & Sons, Chelsea, showed *Miltonia flavescens grandiflora*, *Dendrobium Euryalus*, a cross between *D. nobile* and *Ashworthi*, *Phalænopsis Vesta* (see below), *Chysis Chelsoni*, *Dendrobium Cybele* (award of merit, see below), *D. virginia* (first-class certificate, see below), *D. splendidissimum*, and *Cymbidium eburneo-Lowianum*. J. Gurney Fowler, Woodford, Essex, showed some splendidly grown and flowered specimens of *Cattleya Trianae*, and also miscellaneous Orchids, Palms and Ferns (two silver Flora medals). A group of choice Orchids was arranged by Mr. White, gardener to Sir Trevor Lawrence, Burford Lodge, Dorking. Amongst the best were *Odontoglossum excellens* var. *Chrysomelanum* (first class certificate, see below), *Dendrobium Kingianum album* (botanical certificate), *Dendrobium cucullatum*, *Masdevallia gargantua* (first-class certificate, see below, silver Flora medal).

W. Thompson, Esq., Walton Grange, Stone, received a cultural commendation for a magnificent piece of *Dendrobium Wardianum*. Mr. Murray, gardener to N. C. Cookson, Esq., Oakwood, Wylam, was awarded a first-class certificate for *Dendrobium Sibyl*, a cross between *Linawianum* and *bigibbum*, which will be found described below. Botanical certificates were awarded to *Calanthe striata* and *Pleurothallis asterophora* from the Royal Botanical Gardens, Glasnevin. A very handsome specimen of *Dendrobium splendidissimum grandiflorum*, carrying a large number of small blooms, and also miscellaneous Orchids came from T. Statter, Esq. (silver Flora medal). Some good forms of *Vanda Cathcarti* came from Mr. Iggulden, Marston Gardens, Frome

(first-class certificate, see below). Baron Schröder, The Dell, Egham, sent magnificent spikes of some rare forms of *Odontoglossum* (small gold medal). An award of merit was accorded to R. J. Measures, Esq., Camberwell, for *Cattleya Loddigesii* (see below). From the same source came *Lælia superbiens* (see below), and also *Pleurothallis Barberiana*, and *P. Grobyi*, each of which received a botanical certificate. A cultural commendation was given to Mr. Billington, gardener to W. R. Lee, Esq., Audenshaw, for *Dendrobium splendidissimum Lee-anum*. Mr. Cummins, gardener to A. H. Smee, Esq., The Grange, Hackbridge, sent *Phaius Blumeri*, and was accorded an award of merit (see below).

CERTIFICATES AND AWARDS.

Azalea albicans (Duke of Northumberland).—A most floriferous variety of the mollis type, with almost pure white flowers (award of merit).

Cattleya Loddigesii (R. J. Measures, Esq.).—Larger than the ordinary type, with a beautifully frilled lip.

Clivia (Imantophyllum) miniatum Hillingdon variety (W. Whiteley).—A handsome kind, with a shapely truss of a bright brick-red colour, with a pale yellow throat (award of merit).

Cœlogyne Mossiæ (J. L. Moss, Esq.).—This is said to be a new species, but much resembles *ocellata*. The sepals and petals are pure white, throat white margined with yellow (first-class certificate).

Coleus Mrs. F. Sander (F. Sander & Co.).—A remarkably showy variety, the leaves being white, green, red, and brown. The habit of the plant is dwarf and branching (award of merit).

Dendrobium Cybele (J. Veitch & Sons).—The growth of this hybrid is between nobile and *Findleyanum*, and showing evidences of both parents. The sepals and petals resemble the pollen parent; the lip is white slightly tipped rose, and with a rich dark throat (award of merit).

Dendrobium Sibyl (Norman Cookson).—The sepals and petals bluish-purple in colour, darker towards the tips, lip flattish, white purple tip and pale yellow throat, spotted brown (first-class certificate).

Dendrobium Virginia (J. Veitch & Sons).—This is a hybrid between *Bensoniæ* and *japonica*, the former being the pollen parent. The sepals and petals are white, the lip being of that colour, but having a brownish-red throat (first-class certificate).

Lælia superbiens (R. J. Measures).—The spike staged carried nine flowers, which were much paler in colour than the ordinary type.

Loropetalum chinense (J. Veitch & Sons).—This is a very dwarf-growing plant, the flowers of which are white and very narrow petalled (first-class certificate).

Lycaste Skinneri Mrs. H. Ballantine (Sander & Co.).—The sepals of this variety are broad, very delicate rose in colour, petals deep rose tipped with white, lip pure white with yellow throat (award of merit).

Masdevallia gargantua (Sir Trevor Lawrence).—Of the Chimera section, the flower is of thick flesh, pale sepal and petals, with a broad very dark lip (first-class certificate).

Odontoglossum excellens chrysomelanum (Sir Trevor Lawrence).—This only varies from the type in being paler in colour (first-class certificate).

Phaius Marthæ (Sander & Co.).—This is a hybrid between *Blumei* and *tuberculosis*, and has buff coloured sepals and petals, very pale pink lip with yellow stripe extending into the throat, the sides being brown striped with yellow (first-class certificate).

Phaius Blumei (A. H. Smee, Esq.).—A species introduced from Dutch East New Guinea, light brown sepals and petals, white lip, orange-yellow throat (award of merit).

Phalænopsis Vesta (J. Veitch & Sons).—This is a cross between *P. rosea leucaspes* and *Aphrodite*. The flowers are very much in the style of *P. rosea* in the petals and sepals, but much larger, the lip being broad and richly coloured (award of merit).

Rhododendron Ne Plus Ultra (J. Veitch & Sons).—A handsome variety, with rich crimson scarlet flowers of good size. The habit of this plant is good (award of merit).

Rhododendron Niobe (J. Veitch & Sons).—A fine variety, with soft yellow flowers. (Award of merit).

Streptocarpus Wendlandi (Sutton & Sons).—A showy species carrying its blue and white flowers on a long stalk. The leaves are of enormous size and substance (first-class certificate).

Tricocentrum tigrinum (B. S. Williams & Son).—The leaves of this species are of much substance, flowering at the base. The bloom has a broad white lip, purple on each side of the throat, and brown and yellow sepals and petals (award of merit).

Vanda Cathcarti grandiflora (W. Iggulden).—Sepals and petals much darker than the typical form, the lip being more broad and open. The colour throughout is very rich (first-class certificate).

Vriesia Rex (Duval).—The spike is of good size, with rich crimson bracts (award of merit).

LECTURE ON THE TREES AND SHRUBS OF JAPAN.

At the afternoon meeting at the Drill Hall Mr. Jas. H. Veitch read an admirable essay on the trees and shrubs of Japan. Sir Alexander Arbuthnot, Bart., was in the chair, and the attendance was large.

In opening, the essayist referred briefly to the exceptional richness of the flora of Japan, which he ascribed to the position of the country. The species of trees and shrubs indigenous to the main island were very numerous, more specially at altitudes from 2500 to 6000 feet above the sea level. The climate there was described as very humid and favour-

able to the fullest development of these plants. Mr. Veitch said that in dealing with the flora he should make special note of those plants which were unknown or at any rate rare in this country, and should only briefly mention those which were well known and largely cultivated.

The Magnolias, of which there were eight or nine species, comprised one of the finest families of plants found in Japan. The leaves were very large, and the flowers frequently measured 6 or 7 inches in diameter, the trees sometimes growing to a height of from 80 to 100 feet. Careful reference was made to the timber trees, such as Limes, Maples, Oaks, Hornbeams and Elms, the latter being esteemed as one of the most valuable timber trees of the country. The essayist mentioned the various kinds which were to be found in the country, and illustrated his words with admirably dried specimens of the leaves of the trees he named. Examples of Roses were numerous, and the specimens of Hydrangeas met with were a magnificent sight. In addition to those above referred to many others were mentioned by the essayist in this exhaustive and interesting paper.

A vote of thanks to Mr. Veitch and Sir A. Arbuthnot closed a most successful meeting.

PRACTICAL FORESTRY.

MR. WEBSTER has done a good service by the publication of his excellent manual "Practical Forestry," a work which is a fitting companion to the "Hardy Ornamental Trees and Shrubs" which we noticed a few weeks ago. Such manuals as these tend more to disseminate correct information on the subjects of which they treat than the more bulky and elaborate volumes to which we have of late years been accustomed. Mr. Webster has condensed into a compact form the essence of all that need be said on the subject of which he treats. He begins by treating of the Home Nursery; Collecting and Harvesting Tree Seeds; Propagating; Formation of Plantations; Trees Best Adapted for Various Soils; and in short enters fully into the whole system of forestry. Here is the chapter on "The Manufacture of Charcoal."

"In the preparation of charcoal two different methods are usually employed—one, that of piling the wood in a heap, covering with turf, and setting on fire; the other, by placing the wood in an iron cylinder set in brickwork, and surrounded with fire. The first method is that generally adopted, and will be described first:—

"A piece of ground, sheltered from the prevailing winds, and in a position to which easy access with wood can be obtained, is set apart for the charcoal making. The wood is carted in at any time when obtainable and convenient to spare horse labour from other parts of the forest work, and consists of all kinds of hardwoods (Poplar and Willow are usually excepted), in size, if possible, not under 2 inches in diameter. Principally firewood and rather rough and unsaleable timber are used for this purpose. Among our timber trees Oak, Ash, and Beech generally are preferred, they producing the largest quantity of charcoal, and of superior quality to most others, though that produced from some shrubs, especially *Rhamnus frangula*, is much in request for gunpowder making. The wood is sawn into pieces 2 feet long, and these again split, if required, to about 4 inches square, and, when a sufficient quantity has been cut up for two pits, the building of these is then proceeded with.

"Here it may be necessary to state that it is much better to burn two pits at the same time, as both can be attended to during the charring process as conveniently as one, and do not necessitate the men sitting up at night for each separately. The pits are usually made of conical shape, 21 feet in diameter, and about 9 feet in height, the mode of construction being as follows: A strong stake is driven firmly into the ground, and left protruding about 12 inches; around this are placed small pieces of dry ash of a similar size, and standing as close to the upright stake as possible, around this being placed another layer in the same manner, and so on, until a circle 4 feet in diameter is obtained.

"A circle 1 foot in diameter, and having the top of the stake formerly driven into the ground as a centre, is next made by placing the wood horizontally on the upright pieces, and side by side, repeating the same by laying others on these in a similar manner, until the pit is of the required height, the wood used here being dry pieces of Ash, 24 inches long, but split rather smaller than the ordinary pieces. This forms a sort of chimney by means of which the pits are fired. Outside the wood is placed on end and reclining inwards, this being continued until the pits are of the required size.

"When completed the pits are covered with newly cut turf, the grassy side being placed innermost, beginning at the base and working towards the top, each line of turf overlapping by a few inches the previous one, the circular hole or chimney being left open for firing. The turfs are cut about 1 foot in width, and any length convenient. The quantity required for two pits being about seven cartloads. Before turning the top half of each pit they are carefully examined, and any crevices between the pieces of wood packed full of small bits of turf and sawdust to exclude the air. They are next fired by dropping a couple of shovelfuls of burning wood and some pieces of dry Pine or Ash into the opening left at the top; the top turf is then put on, which effectually shuts up the chimney, after which the process of charring commences. The smoke is first seen issuing from the lower half of each pit, where sawdust has not been used, and, ultimately, all over. Constant attention is required day and night during the period of burning, and especially so should the weather be stormy, as the wind, striking constantly on a particular part of the pit, causes that side to burn very rapidly and fall

into a hole. Should this occur the hole must at once be filled up with rough logs, which had been set aside for the purpose when splitting the wood, and re-covered with turf. When the weather is mild the pits burn uniformly all over, require but little attention, and produce the finest charcoal.

"The time required in burning varies from seven to nine days, according to the state of the weather, dry and mild requiring the longest period. As the charring proceeds the turfs gradually disappear, until only a slight covering of burnt earth remains, after which, and having become cool, the pits are ready for being opened, when it is found they are reduced to about half their original size.

"The charcoal is extracted by means of a rake resembling a light drag, but having much finer teeth, and after becoming quite cold, is stored away until required for use.

"*Kiln Burning.*—The kiln is made of brick, one course being sufficient if bands of iron be added to strengthen the brickwork. It is usually conical in shape, 24 feet in diameter, with an equal height, and holds about forty cords of wood. The wall of the kiln is carried up nearly straight for about 6 feet, when it is gradually drawn in and made of a blunt cone shape. A plate of iron is fastened on the top in the manner of a keystone to an arch. Three-inch iron hoop bands, about an eighth of an inch thick, are placed around the kiln and drawn together by means of screw-bolts and nuts. At the base, and near the top, are double sheet-iron doors, by which it is filled with wood or emptied of charcoal. The time required to fill, burn, and empty is about three weeks. Pit-burning for estate purposes is, however, most commonly pursued, and has this advantage—that the charcoal can be made at any place where timber is being felled, without extra expense, save that of the cartage of the charcoal, whereas in using the kiln or retort the wood must, in most cases, be conveyed to the place where it is erected."

This excellent and useful handbook on Practical Forestry is published by Messrs. W. Rider & Sons, 14, Bartholomew Close, E.C.

UNITED HORTICULTURAL BENEFIT AND PROVIDENT SOCIETY.

THE annual general meeting of this Society was held at the Caledonian Hotel, Adelphi, on Monday, March 12th, Mr. B. Wynne occupying the chair. The attendance, owing doubtless to the wet, was not large, numbering between thirty and forty. The Secretary (Mr. W. Collins) read the report and balance-sheet for the year 1893, which was carried unanimously.

It is pleasant to know that this Society is financially in a flourishing condition, for it is deserving of all the support gardeners can give it. It was, too, a matter for congratulation that during the year only two deaths had occurred. To the successors of one of these was paid the sum of £45 12s. 10d., and the other £24 7s. 3½d. The member to which this latter amount related had not paid money into the Society for upwards of five years, which, as the Chairman remarked in his address, was a point that should tell greatly in favour of the Society, for perhaps no other would have made any disbursement in a parallel case. Fifty-eight new members have been elected during the year, and as a consequence the funds show an appreciable increase. The amount which has been paid during 1893 to sick members is £73 13s. 4d., a decrease of over £14 from the previous year. No call has been made on the benefit fund, the balance of which now stands at upwards of £6200. A balance in hand of over £2000 is proved on the Benevolent Fund; that of the Management Fund amounting to £44 18s. 2½d. The Voluntary Convalescent Fund has been materially increased during the year by the splendid gift of £50 from Messrs. Hurst & Son, in commemoration of the jubilee of the establishment of the firm. The heartiest thanks of the meeting were accorded for this amount. No call appears to have been made on this fund during the year. A slight balance accrued to the Society from the annual dinner, which may thus be termed a success. 2000 balance-sheets were printed in 1893, but after some discussion it was decided that, considering the facilities of distribution and the benefit that would accrue, not alone to the Society, but to the advertisers, that the number should be increased this year to 3000. During the year investments have been made to the amount of £1000, the chief item of which is £800 in 3½ per cent. South Indian Railway stock. The total now invested to the benefit of the Society and its members is £8700, which must be considered highly satisfactory. In addition to the investments a bonus of 4d. in the pound was placed to the credit of the members, which was, as one gentleman remarked, very pleasant to know, as it would swell the amount of his balance somewhat considerably.

In moving the adoption of the report, Mr. Wynne expressed the opinion that the Society was one of the best of which he knew. The benefits to members were far greater than from any other, and considering the able and energetic officers which the Society has, it behoved all members to endeavour to enlist new ones, that the officers might have the pleasure of seeing the Society, in which they took such a deep interest, make rapid progress in its good work. If, said he, each of the 487 members would undertake during this year to find one new one, what a splendid lift that would give to the Society, which would then be established on a perfectly firm financial basis. As some small encouragement, and to show that he was anxious to add his mite to this increase, he undertook to provide one member during the year. Every

young man in a garden should join, was the Chairman's opinion, and it is one we most heartily endorse. The Society, said he, acts a two-fold purpose—namely, that of a benefit society and of a savings bank, and a very safe one, too, for owing to the care and attention devoted to the matter by the officers, the investments were amongst the best that could be made consistent with perfect safety. In conclusion, Mr. Wynne said the Society could not possibly be too widely known, and it was one which every gardener could recommend with the utmost confidence. (Applause.)

The election of the officers for the current year was next proceeded with. Four members of the Committee retired by rotation, but all were re-elected. Mr. Collins, in offering himself for re-election as Secretary, said that if so favoured he should as heretofore do his utmost to forward the interests of the Society. Needless to say his services were requisitioned, for a more indefatigable man for the post could scarcely be found, and he was handed a cheque for £29 13s. 6d. for his work during the past year. All the other officers, including Mr. J. Hudson, the Treasurer, were unanimously re-elected.

After votes of thanks to Messrs. Hurst & Sons, the Chairman, Trustees, and Auditors, had been passed, the proceedings were brought to a close.

ROYAL BOTANIC SOCIETY.

THE first spring Show under the auspices of this Society was held in the Society's Gardens, Regent's Park, on Wednesday, March 14th. The display was, on the whole, an exceptionally fine one, more especially in the section which was devoted to the miscellaneous exhibits. These comprised hardy and tender flowering and foliage plants, the Camellias being superb. The exhibits in this section, too, were numerous, in this respect being the reverse of the competitive classes, which were only small. The following is a list of the prizewinners in the various classes, and the recommendations made by the adjudicators in the exhibits arranged "not for competition."

In the class for six greenhouse Azaleas Mr. Scott, gardener to Miss Foster, The Holme, Regent's Park, was first with finely grown specimens. Mr. Eason, gardener to B. Noakes, Esq., Highgate, was second, and Mr. James, Castle Nursery, Norwood, third. Mr. Odell, Hillingdon, was a good first for six Primulas; Mr. Eason being second, and the St. George's Nursery Co., Hanwell, third. For a collection of hardy herbaceous plants Messrs. Paul & Son, Old Nurseries, Cheshunt, were placed first with an admirable exhibit. Hepaticas, Saxifragas, Pulmonarias, Gentians, and Hellebores were prominent; Mr. T. S. Ware, Hale Farm Nurseries, Tottenham, being second with a very interesting exhibit containing several choice plants. Mr. Douglas, gardener to Mrs. Whitbourn, Great Gearies, was first for six Deutzias, with grand plants; Mr. Eason being a fair second.

For twelve Cyclamens Mr. Odell was first, Mr. Mowbray, Fulmer Gardens, Slough, second, and the St. George's Nursery Co. third. Mr. Douglas was first for twelve Hyacinths with handsome specimens, Mr. Eason being second, and Mr. Scott third. For twelve pots of Tulips the same exhibitors were placed in the order of their names. Mr. Douglas was again first for twelve pots of Crocuses, Mr. Scott being second. For six pots of Lily of the Valley Mr. Scott, the only competitor, was accorded the second prize. For twelve pots of Narcissi Messrs. Douglas and Scott secured the first and second positions. Messrs. Mowbray and Douglas took first and second honours for twelve pots of Freesias, both exhibitors staging splendidly grown plants. Mr. Douglas was the only competitor in the class for twelve Amaryllises, showing fine plants, and was awarded deservedly the premier prize.

The miscellaneous exhibits were of high quality, numerous and much diversified. Messrs. Barr & Son, King Street, Covent Garden, showed a collection of Narcissi and other hardy flowers (large bronze medal). Messrs. J. James & Son, Farnham Royal, staged a fine collection of Cinerarias (small silver medal). Pot Roses were exhibited by Messrs. William Paul & Son, Waltham Cross, as also were Camellias, in pots and cut blooms. Amongst Camellias there were some magnificent varieties, the exhibit forming one of the best features of the Show (large silver medal). Cyclamens in pots were well shown by Mr. Odell (large bronze medal); and Streptocarpus Wendlandi by Messrs. Sutton & Sons, Reading (small silver medal).

The St. George's Nursery Co. arranged a collection of Cyclamens, in which some fine forms were noticeable (small silver medal). A splendid collection of Narcissi in pots was shown by Mr. T. S. Ware; as also were Anemones in variety (small silver medal). A bronze medal was recommended to Mr. Waterer, Woking, for plants of Andromeda japonica. For a collection of flowering plants, including amongst others Ericas, Epacrises, Dendrobiums, Cypripediums, and Boronias, Messrs. W. Cutbush & Son, Highgate, were recommended a small silver medal. Messrs. J. Laing & Son, Forest Hill, staged a collection of foliage and flowering plants. Particularly prominent were Dracenas, Crotons, Palms, Clivias, Dendrobiums, and Azaleas (silver medal). The same award was recommended to Messrs. J. Veitch & Sons, Chelsea, for a handsome collection of plants, comprising Clivias, Rhododendrons, Spiraea confusa, Staphylea colchica, Loropetalon chinense, and Azalea carminata splendens.

A large bronze medal was recommended to Messrs. Paul & Son, Cheshunt, for a collection of plants, including Lilacs, Cœlogyness, Amaryllises and Cannas. Messrs. H. Williams & Son, Fortis Green, Finchley, were recommended a silver medal for a group of Hyacinths, Tulips, and Narcissi, amongst which some fine plants were to be seen.

Messrs. B. S. Williams & Son, Upper Holloway, arranged a striking collection of plants. The Clivias were particularly noticeable; Lilacs, too, were very fine, as also were Azaleas and Orchids (large silver medal). A group of miscellaneous new and rare plants was staged by Messrs. J. Veitch & Sons, and included some most interesting plants. A bronze medal was recommended to Mr. Davies, gardener to W. F. Darnell, Esq., Stamford Hill, for a bouquet and two baskets of Orchids, the arrangement being charming.

SOME CHOICE IVIES.

A COLLECTION of choice Ivies always form an interesting feature in gardens, but there are many establishments where no attempt is made to grow these useful plants beyond, perhaps, a few neglected specimens of the common types. There are numerous varieties in cultivation, and it is a comparatively easy matter to select a dozen or more of choice



FIG. 35.—*HEDERA HELIX TESSELLATA*.

sorts with variegated or green foliage. Some of the silver and golden-leaved kinds are beautiful forms, and they might with advantage be grown on walls in prominent places. For the embellishment of balconies, vases in the flower garden, or baskets in unheated conservatories, these Ivies are useful and should where necessary be employed for such purposes.

Among the golden-leaved varieties *H. chrysophylla* is an attractive form, the green foliage being blotched with pale yellow. *Hedera palmata aurea*, which is also known in some catalogues as "Mrs. Pollock," has finely cut leaves of a bright yellow, edged with green. *H. aurea marginata* is splendidly variegated, the same also applying to *H. aurea spectabilis*. With reference to silver-leaved kinds, *H. Crippsi* is one of the best, and one known as the New Silver Tree is likewise very effective. *H. maderiensis variegata* is well marked, and so is the foliage of *H. marginata elegantissima*.

There are some interesting forms of *H. helix* in existence, one of these being *H. h. tessellata*, depicted in the illustration (fig. 35). This

was exhibited at a meeting of the Royal Horticultural Society last summer by Miss Browning-Hall, Algiers, and an award of merit was adjudged for it. The engraving portrays the character of this attractive form so well that a further description is needless. *H. helix minima* is another distinct variety, with small green leaves, and is suitable for growing in pots.—C.

BIRMINGHAM SPRING FLOWER SHOW.

THE fourteenth annual Exhibition was held in the Town Hall on the 13th and 14th inst, and although the entries were not so numerous as in previous years, their quality was unquestionable.

In the class for eighteen Hyacinths, first Mr. W. Earp, gardener to the Right Hon. Joseph Chamberlain, M.P., with an excellent stand. Mr. W. H. Dyer, gardener to Mrs. Marigold, Edgbaston, was second; and Mr. Priest, gardener to A. W. Hulse, Esq., Beech Lanes, third. For twelve Hyacinths, Mr. Dyer first, Mr. A. W. Hulse second, and Mr. G. Beesley, gardener to N. Thwaites, Esq., Woodbank, third. For six pots of Tulips Mr. Dyer was first, Mr. A. W. Hulse second, and Mr. Earp third. Mr. G. Hancox, West Bromwich, was first for six pots Lily of the Valley. *Dielytras* and *Spiræas* were not sufficiently in flower, and Mr. Grice's three *Deutzias* which gained the first prize were large specimens well flowered. The first prizes for six and three Azaleas were won by Mr. Palmer, gardener to Wm. Bown, Esq., Beech Lanes, Harborne, for grand well-flowered specimens.

For six stove and greenhouse plants there was only one exhibitor, Mr. Fewkes, gardener to T. Clayton, Esq., Castle Bromwich, who was awarded the first prize, and the same exhibitor was again first for three Genistas. Some excellent bouquets were staged, Mrs. Grice, Harborne, Birmingham, taking first honours in each class. Some excellent stands of stove and greenhouse flowers were staged, and the first prize went to Mr. Earp. The first prize for a group of Orchids was awarded to Wm. Bown, Esq. The same gentleman was also first in other classes devoted to Orchids. Some capital groups of plants were staged, Messrs. Earp, Powell, and Dyer, who were successful in the order of their names. In the other special prizes, classes for Hyacinths, Mr. Earp, N. Thwaites, Esq., Mrs. Marigold, and A. W. Hulse, Esq., were the chief winners, the first named winning the prize for *Cyclamens* given by Messrs. Sutton and Sons. Mr. Robert Sydenham offered special prizes for twelve pots of *Narcissus*, Mr. Earp being first with grand plants.

Honorary exhibits formed a striking feature of the Exhibition, being of exceptional merit. Messrs. Thomson & Co. had a fine display of Hyacinths, Tulips, *Cyclamens*, and miscellaneous plants, and four certificates were awarded to their seedling Chinese *Primulas*—Princess May, Duke of York, Mont Blanc, and Fairy Queen. Mr. Robert Sydenham had a group of very fine Hyacinths and *Narcissi*. Messrs. Hewitt & Co., Solihull Nurseries, had a charming display of *Cyclamens* and Azaleas; and Messrs. Pope & Sons, nurserymen, a handsome memorial cross, which was greatly admired. Messrs. Wright and Holmes, horticultural builders, exhibited examples of their patent glazed garden frames.



HARDY FRUIT GARDEN.

Protecting Wall Trees.—Severe frosts, cold east winds, and wet stormy weather are inimical to the welfare of fruit trees if occurring when the blossoms are fully expanded. Under certain conditions the effects are disastrous, being most pronounced when a saturated condition of the flowers is added to an attack by severe frost. More cold, either of frost or wind, can be endured when the blossoms are dry. Heavy dew deposited on the tender flowers, and then frozen, is injurious at the most critical period when the organs of fructification are fully developed.

Retarding Blossom.—The shelter of walls has a tendency to forward the blossoms of Apricots, Peaches, and Nectarines during bright, mild weather, with the result that they are liable to be caught by frosts. If applied early enough an arrangement of blinds and curtains drawn in front of the trees on sunny days only, does much to retard the blooms advancing so fast.

Protecting with Copings and Curtains.—All walls of choice fruit ought to have a moveable projecting coping of wood or glass, this alone often serving to keep the blooms dry when expanded. A coping also affords the readiest means to which to fix curtains. The latter must hang clear of the trees to be effective. The best material is woollen netting, but Hessian, frigi domo, tiffany or canvas may be used. A series of brass rings should be sewn to the upper and lower edges of the material, and strung upon iron rods fixed for the top along the edge of the coping. For the bottom iron rods secured to uprights projecting 2 feet above the ground may be adopted. An arrangement of this kind is easily worked in 10 feet lengths.

Poles and Fish Netting.—When copings are not available stout larch poles may be placed against the walls, reaching the top and set

out about 2 feet at the bottom, where they must be made secure in the soil. Over these affix protecting material or a double or treble thickness of fish netting. The latter if used need not be removed until taken away altogether, but canvas or other close material must be removed daily except in very bad weather. In some positions a single thickness of fish netting may be effectual, while in others two, three, and even four thicknesses will be desirable.

Makeshift Protection.—Temporary protection can be given where more elaborate and trustworthy means are not at hand by placing behind the main branches sprays of evergreens or Spruce, though these are not so good as twiggy branches of deciduous bushes and trees, such as Hornbeam, Birch, and Hazel. Place them so as to hang over the blossoms, this being a better way of protecting than attempting to entirely cover them. Nets and other material hung over trees without being affixed to copings, poles, or framework of some kind often cause injury to the blossoms, which ought to be quite free from pressure.

Planting Fruit Trees.—If any fruit trees remain to be planted they ought to be dealt with at once. Choose dry mild weather. Plant expeditiously, so as not to expose roots to drying influences. See that the soil is deeply prepared and in a well pulverised condition. In planting, see that the ends of the roots are smoothly cut, leaving no jagged portions, these not readily healing. Smoothly cut ends heal quickly, with the result that abundance of fibres are produced. Make the holes wide and shallow, or at least no deeper than will, when filled, cover the boles of the trees higher than before. Width is necessary, so that the roots can be spread to their full extent. Cover few more than 6 inches, these being the lowest. The rest dispose between layers of soil composed of loam with a little wood ashes, the uppermost fibres being about 3 inches from the surface. Stake firmly at once, mulching with half-decayed manure of a moderately dry and flaky character, which will serve to retain moisture in the soil while admitting at the same time the benefits of air and sunshine.

Pruning Newly Planted Trees.—The necessity for pruning or shortening the shoots of fruit trees, whether planted in the autumn or spring, is a matter of considerable importance. Very few trees are planted, except those specially prepared by a course of annual transplanting, without having their roots severely shortened in the operation of lifting. Hence it follows that the branches, if not too old, ought to be dealt with similarly, in order that the balance between them and the roots may be more uniform. When the much-shortened roots are called upon to supply an undue length of wood with fresh sap the result is that the wider distribution fails to produce vigorous growth and often none at all, whereas if concentrated on a less length of wood the buds receiving it would start strongly into growth. The formation of young trees into any desired shape also demands that the branches be shortened so that growth may be originated at any desired point. The best time to prune in these cases is just as the buds begin to swell, shortening the shoots to less than half their length, selecting buds pointing in the right direction. Weakly trees, of course, should be pruned closer, the lesser number of buds left being then better able to start strongly into growth. Shorten shoots deficient in size nearer the point whence they originate, with the object of inducing a stronger extension.

Preparing Stocks for Grafting.—Where trees are intended for grafting, the removal of the wood to clean smooth parts of the bark may be effected in readiness for carrying out the grafting expeditiously. The cuts must be left quite smooth, which will not be difficult if care be taken in detaching the branches so as not to tear or split the bark. After sawing the largest branches half way through commence an undercut to avert disaster.

FRUIT FORCING.

Peaches and Nectarines.—*Early-forced Trees.*—An equable temperature is desirable during the stoning process. With too much heat at night the trees are deprived of rest, and this is not favourable to the fruit. Cold and drying draughts in the daytime are even more injurious, a sudden check sometimes proving fatal to the crop. Continue the night temperature at 60° to 65°, and in dull weather 70° to 75° in the daytime, and ventilate from 65°. Attend to thinning the fruit betimes. It is not advisable to leave, during the stoning period, more than twice the number of fruits that are to be left for the crop. One fruit to a foot of trellis covered with foliage is ample for the large Peaches, the medium-sized varieties may have the fruits a little closer. Nectarines being generally smaller than Peaches are often left much too close, which reduces the size of the fruits proportionately, whereas to secure fine fruits they require thinning similar to Peaches. Secure all the shoots required for extension and next year's bearing to the trellis as they progress, stopping any gross successional growths at a length of about 15 inches. If the stopping results in laterals pinch them at the first leaf, and so on as produced. If extension is wanted the uppermost lateral may be trained in. Pinch laterals on extensions at the first leaf, and succeeding growths also to one joint. If the trees are in good order there will be little necessity for stopping the shoots if they are allowed space for the development of the foliage to solidify the wood as made. Shoots retained to attract the sap to the fruit should be stopped to one leaf, they having previously had the first growth stopped at the second or third leaf. Avoid stimulating the trees while stoning, but afford due supplies of water and food of a phosphatic rather than nitrogenous nature.

Second Early-forced Trees.—Proceed with disbudding, a shoot being left at the base of the present year's bearing wood or last year's young wood, and one on a level with or beyond the fruit. The first must be trained forward, but the latter should be stopped at the second or third

leaf. Upon extensions leave young shoots at 15 to 18 inches distance, the growth from the extremity being trained as a continuation of the primary branch. Commence tying early, as when the shoots are allowed to grow considerably they cannot be brought down without danger of their breaking. Overcrowding must be carefully guarded against; it is fatal to fine, highly coloured fruits and the formation and perfection of the wood for future crops. Thin the fruits by degrees, leaving those well placed upon the upper side of the trellis in sufficient quantity for a crop or a little more until the final thinning before stoning. In no case is it good practice to tax the trees with superfluous fruits after they are the size of marbles. A temperature of 55° to 60° at night, 65° by day, increasing to 70° to 75° is suitable.

Houses Started at the Beginning of February.—The trees in these have set their fruits—that is, the early varieties, while the late trees are in full blossom, and should be fertilised when the pollen is ripe. When the fruit is all set recourse must be had to syringing in the morning and afternoon of fine days, but an occasional sprinkling, with damping the house, will suffice in dull weather, always having the foliage and young fruit dry before nightfall. Disbudding must be done gradually, commencing with the most forward growths, also thinning the fruit after it is seen which takes the lead in swelling, removing the smallest first, but avoid large reductions of foliage or of fruit at one time. A temperature of 55° at night, 5° less on cold mornings, 55° to 60° by day, advancing to 65° or 70° with gleams of sun, will bring the fruit on sufficiently fast, ventilating from 55° or 60°, and not allowing an advance above 65° without full ventilation.

Houses Started Early in March.—With the flowers expanding syringing the trees must cease, for there is danger, especially in dull weather, of weakening the blossom and converting the pollen into paste. An occasional syringing may, however, be practised if the weather be unusually bright and the atmosphere dry. Damping the floors and borders is generally sufficient, and a safer plan. Admit air freely in mild weather, and fertilise the flowers on fine days. Maintain the night temperature at 45° to 50°, 55° by day artificially, and 65° from sun heat. Admit a little air constantly, increase the ventilation at 50°, and give more as the heat rises, having full air on at 65°, closing at 50°. Superfluous flowers on the under side or back of the shoots may be removed by drawing the hand down the growth.

Late Houses.—Where the roof lights have been removed they should be replaced at once, the buds being well advanced in swelling, and promising an abundant crop of fruit. If there be any trace of aphides apply an insecticide or fumigate the house before the flowers expand. Nothing conduces more to a good set than removing the flowers on the under side or back of the trellis, and turning on the heat after the anthers show for a short time in the early part of the day, to advance the temperature to 50° and to permit of ventilation, as if there is a prevalence of dull cold weather at that time, closing the ventilators for safety prejudices the pollen. Houses that have fixed roof lights must have the borders rendered thoroughly moist.

Figs.—**Early Forced Trees in Pots.**—The Figs are now swelling rapidly, and the trees will require to be well supplied with water and nourishment. Liquid manure from tanks may be given whenever water is required, as Figs are gross feeders, but it must not be too strong nor applied cold, but warmed to the same temperature as the mean of the house. If the pots are well drained, it is scarcely possible to apply water too copiously when the trees are in full growth. An occasional sprinkling of some approved fertiliser on the pots will be beneficial. The night temperature may be continued at 60° to 65°, with 10° more by day, and from sun heat advance to 80° or 85°, affording adequate ventilation when the weather is favourable. Maintain a genial atmosphere by syringing the trees twice a day when the weather is bright, but avoid keeping the foliage constantly wet, as would be the case by syringing vigorously in dull weather. Damp the paths and walls, and keep the evaporation troughs charged with liquid manure, or sprinkle the paths with it occasionally, and to check red spider paint the hot-water pipes with sulphur. Avoid crowding, stopping or tying the shoots as growth advances, as the fruit to have flavour and colour must when ripening have full exposure to light, combined with a circulation of warm dry air.

Planted-out Fig Trees.—The growth under favourable climatic conditions is very rapid, hence the necessity of frequent attention in stopping the shoots at the fifth or sixth leaf. As a well-developed spur, as such stopped shoots are called, gives the best results in the second crop, when a number of growths appear together they may all be removed but one, so as to cause it to be sturdy and fruitful. Train and regulate the terminals as required. Keep the house genial by daily syringing and damping the paths at closing time.

Raising Young Fig Trees.—This is a good time to propagate young plants from cuttings. Select shoots from 5 to 6 inches in length, with a heel of last year's wood attached, and remove all the eyes on the part to be inserted in the soil. They root freely in a bottom heat of 75° to 80°.

Cherry House.—It will soon be seen whether the fertilising was effectual, as the Cherries will be swelling at the base of the decayed flowers, when syringing may be resumed—once a day at present, and twice a day after the remainder of the flowers are cast and the weather is clear and warm. Fire heat will only be necessary to prevent the temperature falling below 40° at night, and to maintain 50° as a minimum by day. Ventilate at 50°, closing at the same, regulating the ventilation according to circumstances, but not allowing a rise above 65° without full air. If green aphides appear fumigate the house, and

keep a sharp look out for black aphid, assailing it on its first appearance with tobacco water applied with a brush to the affected parts. The foliage must be dry when fumigation is practised. Keep a strict look out for grubs. Stopping will soon require attention. Pinch out the points of the shoots when they have made 4 to 5 inches of growth, removing those shoots that are not required. Train extensions in their full length, also those for filling vacant spaces. Overcrowding must be strictly guarded against, it being prejudicial both to the present and future crops.

Pines.—**Suckers.**—The rooting of potted suckers will be indicated by the growth of the foliage, but it is well to turn the plants out of the pots, or a portion of them, to ascertain the condition of roots and the soil. The young roots which issue from the base of suckers or plants similarly treated are very tender and susceptible of injury from the effects of too much bottom heat, hence when the roots reach the sides of the pots 85° is ample, above which there is danger. When the bottom heat is excessive the pots must be raised, placing some loose tan under and around them to allow the superabundant heat to pass away without injuring the roots. The plants should be carefully supplied with water, and not have too much top heat, nor be too far from the glass, or they will become drawn and weakly.

Potting Pine Plants.—Once the suckers and other plants subjected to similar treatment start they make roots rapidly, therefore have soil ready for transferring them to the fruiting pots, as it is important that they be grown without check by being either root-bound or dry. Sound fibrous loam in good sized lumps is the best material for potting, rejecting the dusty particles. It should be pressed firmly round the balls of the plants, watering them if the soil be dry (not otherwise) with tepid water, and plunging them in a bottom heat of 90° to 95° until the roots have possession of the fresh soil, when 85° is more suitable. The top heat should be maintained at 60° to 65° at night, and 70° to 75° by day, with 10° to 15° rise from sun heat.

Fruiting Pine Plants.—Those at or near the flowering stage should have a night temperature of 65° to 70°, and 75° by day, with 80° to 90° from sun heat, closing at 85°, well damping all walls and paths at the same time. Successional plants may have a bottom heat of about 85°, ventilating at 80° and closing at 85°, lightly sprinkling the plants occasionally. A genial atmosphere should be secured by damping the floors and pit walls as they become dry, but it is not good practice to syringe the bed between the plants. Examine the plants once a week and supply tepid water, containing a little stimulating substance such as guano or soot, when required.

THE BEE-KEEPER.

APIARIAN NOTES.

DEATH OF AN OLD BEE-KEEPER.

ON the 24th ult. Mr. James Wilson, Millhugh, near Larkhall died, aged ninety-three years. He was the oldest Freemason in Scotland, and perhaps the oldest bee-keeper. He was clerk to the Larkhall Bee Society for fifty years. Highly respected in the district, he was known by the cognomen of "Provost," not because of his ambition, but from the confidence the people had in him. This is one of three deaths, all of successful bee-keepers, within a month, residing within a short distance of each other. One of them named Forrest had a fair sized apiary, his wife and daughter managing the bees both at home and the moors successfully.

LARKHALL BEE-KEEPERS.

Bee-keepers, florists, and bees are not having a very enjoyable time of it. The barometer is falling, and it is the 9th of March; the ground is sodden, and outdoor work is in a backward state. The morning of the 3rd was bright, promising a fair day, so I started on a visit to the Larkhall bee-keepers; but the day turned out wet and stormy, which unfortunately prevented many inspections.

Larkhall people have by their united action given a good example by their thrift and independent spirit of how home comforts may be realised, and "home rule" of the right kind established. The majority of them are proprietors of their dwellings. They have their mutual improvement and other societies, and from a moral point of view are worthy of being imitated.

Many bee-keepers are amongst them. My first visit was to Mr. John Nicol, rather an extraordinary person, as is also Mrs. Nicol. It is several years since I was there, and from the long streets of uniform houses it was not easy for a comparative stranger to find the right door, so I made up my mind to pause at the tidiest doorstep and window. Mrs. Nicol welcomed me in. Her husband, acting as clerk to all the societies of the village, was absent on duty. Mr. Nicol has a taste for music, and has some very fine instruments in the violin line of his own make. Being a weaver in silk he was appointed representative of that industry at the Edinburgh International Exhibition, wove, and presented to Her Majesty the Queen and other members of the Royal family some beautiful designed pieces of his

handiwork. The members of the Royal family took particular interest in Mr. Nicol, and conversed freely with him. He has a high opinion of Princess Alexandra, finding in her many "homely" virtues.

On my previous visit to Mr. Nicol a clergyman came in, and instantly taking down a fiddle of superior tone discoursed some beautiful airs, after which he told me he had applied to Mr. McDonald, proprietor of the *Farming World*, who was the best authority to apply to for information on bee husbandry. The cleric was referred to me, and the information he obtained enabled a younger brother student in the university to pass the apian part of his examination satisfactorily.

Mrs. Nicol and I agreed that home comforts should be a prior consideration to that of accumulating money. If bee-keeping and allotments were pursued on these lines they would be more satisfactory to those immediately concerned. "The love of money" in many present-day cases was truly the cause of much misery and disappointment. She was of the firm opinion that honey was a valuable domestic edible and medicine, and agreed with me that more bee-keepers with small apiaries would be consistent with a reduction of the larger ones, whose owners are mostly dealers. Mr. Nicol is very much of the same opinion, and in a humorous way, in reply to a question on modern ideas, said he liked to read literature of a reliable practical kind, but that was not to be found everywhere.

We then visited Mr. Peter Finlayson, an energetic working man and successful bee-keeper, who also believes in small apiaries. He began 1893 with seven hives. We chatted over the two queens in one hive system being of Scotch origin, and of the vacillating editor who said, "If your bees swarm there will be no honey," as well as many other inconsistencies. From seven hives, spring count, Mr. Finlayson realised 1100 lbs. of honey and honeycomb and 30 lbs. of wax. The best hive was and has always been one I presented him with many years ago, being neither more nor less than a huge box with moveable top bars, made thirty years since for two queens. These facts speak for themselves, confirming what I have often advocated—to be a thorough bee master, or any master, you must know what you are writing about—give more of your own experience and less of that appropriating spirit so prevalent in these advanced days.

Mr. Finlayson, with the exception of the wooden hive named, has the rest of his bees in straw skeps. He gives each hive 5 lbs. of sugar in the early spring, which generally suffices till swarming time, but if occasion requires it he is not slow to prolong the supply. He allows each stock to swarm twice. Three weeks after the first swarm issues the contents of the hive are taken, and the bees either put into an empty hive or joined to one of the swarms. Most of the Clover honey is obtained before they are taken thirty miles by road to the Heather; then, when weighty there, are removed home, the bees joined and fed into good stocks for next season, he knowing well the risk attendant Heather honey in the hive during winter.

Mr. Finlayson never has combs older than one year, whilst most of them are about three months old only, and therefore he is not troubled with pollen coming in contact with his honey, as invariably is the case when whole combs more than a few months old are pressed. The combs of the old stock three weeks after swarming contain Clover honey only. By his method he has the purest of honey, while youthful queens and new combs are the keys to successful and profitable bee-keeping. So well does the honey from Mr. Finlayson's apiary please that I saw letters from merchants asking him to send all he had next year.

The two bee-keepers named were the only ones, owing to the storm, I met; but some day I may return to the bee-keepers of the same district. One whom I know had a single colony nearly 400 lbs. in weight at the end of the season of 1893.

DRONE BREEDERS

Are numerous about here this year. The queens of these should be deposed, and the bees either joined to another stock, or better, after the lapse of one week from the killing of the queen, start queen-rearing. If considered too early destroy all queen cells and give fresh eggs. By the time these are hatched the weather will be warmer.—A LANARKSHIRE BEE-KEEPER.

TRADE CATALOGUES RECEIVED.

J. Cheal & Sons, Lowfield Nursery, Crawley, Sussex.—*Spring Catalogue of General Plants.*

Dobie & Mason, 22, Oak Street, Manchester.—*Farm Seeds.*

Ellwanger & Barry, Mount Hope Nurseries, Rochester, U.S.A.—*General List of Trees and Roses.*

Harrison & Sons, Seed Growers, Leicester.—*Farm Seed Catalogue.*

Hogg & Robertson, 22, Mary Street, Dublin.—*Book of the Farm.*

E. H. Krelage & Son, Bloemhof Nurseries, Haarlem, Holland.—*Bulbs for Spring Planting.*

Vilmorin, Andrieux & Co., 4, Quai de la Mégisserie, Paris.—*Catalogue of Shrub and Tree Seeds.*



TO CORRESPONDENTS

*All correspondence should be directed either to "THE EDITOR" or to "THE PUBLISHER." Letters addressed to Dr. Hogg or members of the staff often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post, and we do not undertake to return rejected communications.

Orchids and Violets (T. S.).—The flowers of *Dendrobium nobile* are very good indeed, but the varietal form not distinct from others in cultivation. The Violets were splendid—as good as anyone could wish for.

Protecting Seeds from Birds (F. A. C. C.).—Damping the seeds and dusting them before sowing with red lead does not affect their germination, while it renders them distasteful to birds. Also in the absence of nets string the beds closely with cotton, and dust the seedlings, immediately they appear and are wet with dew, with sharp sifted wood ashes and soot, repeating as necessary.

Cutting Gladiolus Corms (F. T. T.).—The practice of cutting the corms of Gladioli into halves with buds attached is as safe as cutting Potatoes, and is done much in the same way—by placing the knife blade between the buds on the top of crown, and cutting straight through the corm. It has the advantage of securing fine spikes, prevents crowding, and doubles the number of plants. It should be done a short time only before planting. The practice has frequently been advocated by "D. Deal," and quite recently. See page 144, February 22nd, 1894.

Yellow Tomato Leaves (C. B. A.).—The midribs of the leaves appear to be slightly ruptured as well as signs of mildew; but as the oil and sulphur application has done good, and as only the lower leaves are affected, the plants will probably improve under good management and the better weather that may now be expected. Through a deficiency of light and air the leaves have perhaps not been able to perform their functions of elaboration and assimilation, hence their condition. Is the soil firm enough? Loose and too rich soil is not favourable to healthy growth.

Soot in Strawberry Pots (S. F. A.).—An inch of soot placed in the bottom of each pot with leaves is very much in excess of what is usually employed, a sprinkling only being given, as a rule, on the rough material over the drainage. This acts as a preventive of worms entering the pots as well as a stimulant to the plants. The quantity of soot employed would be likely to close the drainage, and the roots coming in contact with it must of necessity be destroyed, the combined effect being highly prejudicial to the plants. Watering with soot water several times when the plants were taken in to force would further aggravate the evil, especially if they were not well furnished with roots. This is not the first time we have known of the injury by the excessive use of soot.

Managing Vines (W. P. H.).—The Vines now flowering should have a night temperature of 65°, falling to 60° in the morning, and the top ventilators may be left open half an inch or so all night. When the temperature rises above 65° in the morning admit more air, but not to lower the temperature, increasing the openings of the sashes at each increase of 5°. The heat then rises naturally and steadily, and it may rise to 80° or 85° with sun, as indicated by a shaded thermometer. No greater mistake can be made than to have the sashes closed so long in the morning that the house becomes too hot, and a large volume of air has to be given to cool it. It is also a mistake to admit sharp currents of air through the front sashes. It is a good plan to give Vines when flowering a sharp jerk at midday for dispersing the pollen. They should not be syringed, but a genial atmosphere can be maintained by damping the paths once or twice a day during bright weather. Close the house gradually as soon as the temperature commences falling in the afternoon. The growths of laterals bearing the bunches should have been nipped off before now. Two leaves beyond the bunches may be permitted if they have room to develop. Overcrowding the growth and foliage is one of the greatest evils to which Vines can be subjected. The laterals should be from a foot to 18 inches apart, if closer some should be removed. Vines just starting may have a night temperature of 55°, falling to 50° in the morning. When the leaves unfold increase by 5°, and when bunches are prominent 5° more, with the usual increase with sun. The house may be kept more moist before the bunches flower, and after the berries are set, than during the flowering period.

Raising Genistas from Seed (Highlands).—Genista seed sown in pots of free sandy soil—a mixture of loam, peat, and sand—kept uniformly moist in a warm frame or greenhouse, germinates freely. The seeds may be covered twice their own thickness with soil, a square of glass laid over the pot, and this shaded until the seedlings appear. These cannot be kept too close to the glass to attain a sturdy habit of growth, topping them when 2 or 3 inches high, and subsequently to obtain bushy plants. They may be grown in frames in early summer, and subsequently in the open air, the pots being stood on ashes. Seedling plants are not so floriferous as those raised from cuttings.

Dendrobiums after Flowering (A. D. P.).—Plants that have flowered must be watered with great care. Injury often results in their present stage from giving them too much water. The roots of many are still inactive, and if they are kept in a wet state numbers are certain to perish. The reason many Dendrobiums decline in health after the first or second season is frequently owing to keeping them in a saturated condition as soon as flowering is over and the plants commence growing. They need little water at first, a slight dewing with the syringe being ample in a moist atmosphere until the formation of new roots. As the roots and growth extend the supply of water should be increased. Plants would last longer and increase in strength if greater care was exercised during the early stages of growth, and again after the completion of growth. When *D. nobile* starts into growth it often pushes growths freely from the pseudo-bulb. If these are not wanted for stock they should be removed, for they have a tendency to rob the growths that issue from the base. This old but very useful Orchid delights in a moist atmosphere.

Compost for Orchids (E. H.).—A suitable compost for Cypripediums *insigne* and *barbatum* would consist of equal parts good fibrous peat, fresh sphagnum, and loam fibre, with a liberal admixture of potsherds or charcoal. The drainage must be exceptionally good, as these plants require abundant supplies of water at the roots while growing, and even in the winter must not be dried off in the way pseudo-bulbous plants generally are. In potting be careful to cut away all decayed roots, and spread out those that are healthy, so that the compost runs evenly amongst them. Cypripediums should not be raised above the rims of the pots, but kept slightly below, as in potting ordinary plants. *Dendrobium nobile* and *Oncidium ornithorhynchum* thrive best in peat and sphagnum in about equal proportions, with a few nodules of charcoal added to ensure aëration. Fill the pots two-thirds of their depth with crocks, over these put a thin layer of rough moss, then press the compost firmly about the roots, keeping the base of the bulbs an inch or so above the rim of the pot, finishing so that they just rest on the top of the compost. All the kinds mentioned are easily grown in a warm moist house. *Dendrobium nobile* should be kept well up to the light, while the *Oncidium* and *Cypripediums* need a shady position.

Seedling Cyclamens (F. T. T.).—The seedlings from last July sowing should now, if not already done, be placed in 3-inch pots singly, and after April be grown in frames during the summer, with plenty of air after becoming established, shading from bright sunshine, a single thickness of tiffany when the sun is powerful being sufficient. By July most of the plants will have filled the pots with roots, and they should then be shifted into 5-inch, or if the plants are very strong into 6-inch pots, in which they will flower. Good drainage must be provided, and a compost used of turfy loam and leaf soil in equal parts, with a free admixture of sharp sand. The roots proceed from the base of the fleshy rootstocks, and these should only be about half covered with soil, leaving the tops clear from whence the leaves and flowers proceed. The plants must be kept near the glass to prevent drawing, shading in bright weather only, watering liberally, but not excessively, and sprinkling them on fine afternoons to encourage growth and keep the plants free from red spider and thrips. The plants should be housed in September, assigning them a light position in a greenhouse; but they flower best in a temperature of 50° to 55°, though when in bloom they last much longer in a temperature of 45°. They require a humid atmosphere during the summer, and the pots should stand on a damp base, not on dry boards or an open stage.

Scale on Currant Branch (W. W. W.).—The branch is infested with the Currant and Gooseberry scale (*Lecanium ribis*, *Fitch*). It is gregarious on Red Currant and Gooseberry bushes, and sometimes on the White Currant. The insect does considerable injury by extracting the juices, greatly weakening the trees, and by its honeydew-like secretions clogging the pores of the leaves and spoiling the fruit. The insect commences hatching from the eggs in March, being provided with six legs and two horns (antennæ), and several small hairs or bristles. It moves briskly about in the woolly matter beneath the scale or shell of the parent (long since defunct), and fixes on a portion of last year's wood or older, pushing its beak into the bark becomes fixed for life; it finally produces numerous eggs, and secretes a woolly substance in which they remain beneath, protected by the shell during the winter. The best remedy for the scale is an emulsion formed of equal parts by weight of softsoap and petroleum stirred in hot water to form a thin paste, further stirring briskly with a switch formed of part of an old birch broom for ten minutes, or until the softsoap and petroleum coalesce; then dilute with hot water to a safe strength, which is 1 gallon of water to every 3 ozs. of softsoap used. The emulsion should be applied with a brush to every part of the bushes after pruning and before growth takes place in the buds. It must be warm when used, and not allowed to run down to the roots.

Scale on Oleander (Amateur).—*Neriums* are subject to this species of scale insect and then follows black fungus. The insect is known to gardeners as the orange scale. To free the leaves of it they should be washed with a solution of softsoap at the rate of 6 ozs. to the gallon of water. The plant first of all should be syringed with water at a temperature of 140°, which is not too high if syringed on the plant; but if the latter be immersed the water must be at 120°, and the plant should be kept in the water one minute. The leaves are to be washed on both sides with a sponge, pressing whilst washing them, so as to dislodge the insect and remove the black fungus. After the leaves have been washed on both sides they should be allowed to dry, and then the plants should be syringed with water at 140°, laying the pots on their sides so that the hot water may not wet the soil. The insects near the midribs may be dislodged by employing a pointed stick. A good washing with softsoap will generally keep the insects under, but repeated washings are necessary to keep plants subject to it clean.

Names of Plants.—We only undertake to name species of plants, not varieties that have originated from seed and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in firm boxes. Slightly damp moss, soft green grass or leaves form the best packing, dry wool the worst. Not more than six specimens can be named at once, and the numbers should be visible without untying the ligatures, it being often difficult to separate them when the paper is damp. (*W. P.*)—1, 2 and 3 are all forms of *Cattleya Trianae*; 4, *Dendrobium fimbriatum oculatum*. (*Glenlea*).—*Clematis indivisa lobata*, probably, but the flowers arrived completely withered and curled. (*G. B. M.*)—1, *Cypripedium Boxalli*; 2, *C. insigne*; 3, *Dendrobium Ainsworthi*; 4, *Oncidium splendens*; 5, *Saccolabium giganteum*; 6, *Dendrobium Wardianum*, very fine form. (*R. J. T.*)—1, *Boronia megastigma*; 2, *Justicia carnea*; 3, *Kentia Belmoreana*; 4, *K. Canterburyana*. (*Gifford*).—1, *Centradenia rosea*; 2, Specimen insufficient, no flowers, and no particulars; 3, *Anemone fulgens flore-pleno*; 4, *A. fulgens*.

COVENT GARDEN MARKET.—MARCH 14TH.

MARKET still very quiet.

FRUIT.

		s.	d.	s.	d.			s.	d.	s.	d.
Apples, per bushel	.. ..	2	6	to	9	0	Lemons, case	.. ..	10	0	to 15 0
„ Nova Scotia, per barrel	.. ..	12	0	24	0	Peaches, per doz.	.. ..	0	0	0	0
Cobs	.. ..	40	0	42	6	Plums, per half sieve	.. ..	0	0	0	0
Grapes per lb.	.. ..	1	0	3	0	St. Michael Pines, each	.. ..	2	0	6	0
						Strawberries per lb.	.. ..	10	0	16	0

VEGETABLES.

	s.	d.	s.	d.		s.	d.	s.	d.
Asparagus, per bundle ..	7	0	to	8	0	Mustard and Cress, punnet	0	2	to 0 0
Beans, Kidney, per lb. ..	0	6	1	0	Onions, bushel	3	6	4 0	
Beet, Red, dozen	1	0	0	0	Parsley, dozen bunches ..	2	0	3 0	
Carrots, bunch	0	3	0	4	Parsnips, dozen	1	0	0 0	
Cauliflowers, dozen	2	0	4	0	Potatoes, per cwt.	2	0	4 6	
Celery, bundle	1	0	1	3	Salsafy, bundle	1	0	1 5	
Coleworts, dozen bunches	2	0	4	0	Scorzoneria, bundle	1	6	0 0	
Cucumbers, dozen	2	0	7	0	Seakale, per basket	1	3	1 6	
Endive, dozen	1	3	1	6	Shallots, per lb.	0	3	0 0	
Herbs, bunch	0	3	0	0	Spinach, bushel	1	6	3 0	
Leeks, bunch	0	2	0	0	Tomatoes, per lb.	0	6	0 9	
Lettuce, dozen	0	9	1	0	Turnips, bunch	0	3	0 0	
Mushrooms, punnet	0	9	1	0					

AVERAGE WHOLESALE PRICES.—OUT FLOWERS.

Orchid Blooms in variety.

	s.	d.	s.	d.		s.	d.	s.	d.	
Arum Lilies, 12 blooms ..	1	6	to	3	0	Narciss, White (French),				
Azalea, dozen sprays ..	0	4	0	6	dozen bunches	3	0	to	5	0
Bouvardias, bunch ..	0	6	1	0	Pelargoniums, 12 bunches ..	6	0	12	0	
Camellias, dozen blooms ..	0	9	2	0	Pelargoniums, scarlet, doz.					
Carnations, 12 blooms ..	1	6	3	0	bunches	4	0	6	0	
Daffodil or Lent Lily ..	1	6	2	0	Primula (double), dozen					
„ double	2	0	3	0	sprays	0	6	1	0	
„ single	2	6	9	0	Primroses, doz. bunches ..	1	0	2	0	
Eucharis, dozen	2	0	4	0	Pyrethrum, dozen bunches	2	0	4	0	
Gardenias, per dozen ..	6	0	9	0	Roses (indoor), dozen ..	1	0	2	0	
Hyacinths, dozen spikes ..	2	0	4	0	„ Tea, white, dozen ..	1	0	3	0	
Hyacinth, Roman, dozen					„ Yellow, dozen	2	0	4	0	
sprays	2	0	6	0	Roses (French), per dozen	3	0	6	0	
Lilac (French) per bunch	2	6	4	0	Roses, Safrano (English),					
Lilies of the Valley, dozen					per dozen	2	0	3	0	
sprays	0	6	1	0	Roses, Maréchal Neil, per					
Lilium longiflorum, per doz.	3	0	6	0	dozen	3	0	6	0	
Maidenhair Fern, dozen					Snowdrops, doz. bunches ..	1	6	3	0	
bunches	4	0	6	0	Tuberose, 12 blooms ..	0	6	1	0	
Marguerites, 12 bunches ..	2	0	4	0	Tulips, dozen blooms ..	0	6	1	0	
Mignonette, 12 bunches ..	3	0	6	0	Violets, Parme (French),					
Myosotis or Forget-me-					per bunch	2	0	3	6	
nots, dozen bunches ..	3	0	6	0	Violets, Ozar (French), per					
Narciss, Yellow (French),					bunch	2	0	2	6	
dozen bunches	1	6	2	6	Violets (English), dozen					
Orchids, per dozen blooms	1	0	9	0	bunches	0	9	1	0	

PLANTS IN POTS.

	s.	d.	s.	d.		s.	d.	s.	d.				
Arbor Vitæ (golden) dozen	6	0	to	12	0	Ferns (small), per hundred	4	0	to 8	0			
Arum Lilies, per dozen	..	6	0	12	0	Ficus elastica, each	..	1	0	7	6		
Aspidistra, per dozen	..	18	0	36	0	Foliage plants, var., each	..	2	0	10	0		
Aspidistra, specimen plant	..	5	0	10	6	Genista, per dozen	..	..	9	0	15	0	
Azaleas, per dozen	..	24	0	42	0	Hyacinthus, per dozen	..	..	5	0	9	0	
Cineraria, per dozen	6	0	12	0	Lilium Harrissi, per dozen	..	15	0	18	0	
Cyclamen, per dozen	9	0	18	0	Lycopodiums, per dozen	..	..	3	0	4	0
Dracena terminalis, per dozen	18	0	42	0	Marguerite Daisy, dozen	..	..	6	0	12	0
Dracena viridis, dozen	9	0	24	0	Mignonette, per doz.	..	..	6	0	10	0
Ericas, per dozen	9	0	24	0	Myrtles, dozen	..	..	6	0	9	0
Euonymus, var., dozen	6	0	18	0	Palms, in var., each	..	..	1	0	15	0
Evergreens, in var., dozen	6	0	24	0	„ (specimens)	..	..	21	0	63	0
Ferns, in variety, dozen	4	0	18	0	Solanums, per dozen	..	..	9	0	12	0
							Tulips, per dozen	..	..	6	0	9	0



FOWLS FOR FARMERS.

HARDY, good for eggs, good for table chickens, good winter layers, and reliable for plenty of early spring chickens. Have we such a fowl as this? Take the Light Brahma. Here we have a good winter layer, a large heavy fowl, a non-flyer, nor is it given to wander far, but it is regarded as an inferior table fowl. Cross it with the White Dorking, select carefully for the best points indicated both for chickens and eggs. In doing this, exercise much caution and patience; it is not to be done in a single season, but that in due course it would lead to results entirely satisfactory we doubt not. On the Dorking side there is delicacy of flesh, but then there is also a delicate constitution, and an average of only about ninety eggs. Take a well-formed Dorking cock, mate it with the best type of Brahma hen, and the requisite improvement of flesh may be obtained without seriously affecting the good laying properties of the Brahma. Do this repeatedly, select the most promising birds of both sexes from each brood, watch results closely, and by rigorously discarding all doubtful or inferior birds a yard of really superior white-legged fowls may be had.

Of pure breeds the Langshans may be said to approach more nearly than any other to our ideal farmer's fowl. Its laying average is fully double that of the Dorking; it is one of the very best table fowls, having small thighs, deep, full, plump breasts, and is such a rapid grower that early birds are a certainty. Justly has it been termed "a splendid fowl on the table," but it is as black legs. Does not this show the folly of the fancy or fashion (call it what you will, under any term it is as unreasonable as absurd) of the poultry dealers' demand for five claws and white legs? Glad are we to know that this stupid fancy is dying out, and that chickens are fast coming to be valued for intrinsic merit and not for a fancy. Selection tells among the Langshans as among all other breeds, for what are termed good all-round fowls, or good in every valuable property, without excelling in one at the expense of others, also for grand heavy cockerels, as heavy as a fair-sized Turkey, with magnificent breasts, and flesh as white and delicate as a Dorking. Try the Langshans, say we to every farmer and cottager; there are plenty of good birds on offer every week in *Poultry*. Avoid cheap birds; purchase a well-bred cock with four or six hens, young birds now laying freely, and by using other hens or an incubator for hatching several useful broods could be had this season. Much better is it to do this than to buy sittings of eggs; the outlay may be greater, but the result is speedy and certain.

In no other breed do we find such general excellence, not even among the "all-round" breeds. Plymouth Rocks are fine birds, the chickens grow with singular rapidity, growing to a large size, and the hens are good layers of nice brown eggs. But the eggs are small, and the flesh of the table birds yellow, which appears likely to prevent them from ever becoming a leading breed with us either for table fowls or for eggs.

Houdans are excellent table fowls, especially valuable as spring chickens; they are fairly free layers, but their average is much inferior to the Langshans, yet they are regarded by many breeders as good farmyard birds. They are very hardy and fairly profitable, yet the fact of their being non-sitters tells seriously against them.

The Brahma as a pure breed has its admirers, but though a

large, heavy fowl, it is inferior as a table bird, and we cannot recommend it except for crossing, as we have shown.

For eggs only we should give first place to Minorcas for their large eggs and high average; but they have no mean rivals in the Andalusians and Leghorns. Hamburgs may lay more eggs, but they are small, and we have not found the birds everlasting layers by any means; they moult early, and cease laying early. The Spanish breeds we have mentioned all answer well. The white shells of the Minorcas may be an objection to a fancier; for all practical purposes the eggs are excellent. Size and number must tell, and an average of 250 cannot be despised.

WORK ON THE HOME FARM.

Though the weather has been showery, by following the sheep folds closely with ploughs, and sowing also closely after them, Lent corn has been got in well. There is such an ample supply of Swedes left that folding and sowing must go on for some time. Barley sowing under these conditions has its limits, and all the later sowings will be of Oats.

Our use of chemical manures for spring corn is entirely a thing of circumstances. Where the folding is heavy or close, in view of the entire consumption of the roots, or Thousand-headed Kale, then nothing additional may be required. But we prefer to pay heed to every point—health of the flocks, timely sowing of seed, and the harvesting of it well. New folds are therefore used before the soil in the old ones becomes hurtfully muddy, the flock is moved on before every scrap of root or green food is cleared up. Then if there is any doubt of the land being rich enough in plant food for the next crop some manure is drilled in with the corn. It may consist simply of nitrate of soda and superphosphate or of the nitrogenous manure only. But when we are bringing poor land round—land which has been farmed out and was taken last Michaelmas, then we know that manure cannot well be overdone, and we have a special mixture, a complete plant food rich in every essential. Here it is:— $\frac{1}{2}$ nitrate of soda, $\frac{1}{2}$ sulphate of ammonia, $\frac{1}{2}$ steamed bone flour, $\frac{1}{2}$ muriate of potash, $\frac{1}{2}$ mineral superphosphate. Of this from 1½ to 2 cwt. per acre may be used for cereals and double that quantity for roots. Try it, and you will find it a good investment.

It is a manure to have by one, to turn to at any and every time when soil is deficient in fertility. No scourging or soil exhaustion is possible where it is used, and in a dry store room it may be kept in good order throughout an entire season. Resolve to have no inferior crops this season, but so to sow, plant and manure, and to have crops full and abundant everywhere, to have no stunted growth for lack of fertility of soil.

OUR LETTER BOX.

Pickling Hams (C. D.).—Our advice in this matter has reference to hams of the usual shape with the bones left in; nor can we understand how, if hams are cut in the usual way, that rolling is either possible or necessary. You must try an experiment, rolling one or more before and the others after drying. We vote for rolling before drying, certainly. The suet is to impart flavour, just as are the other ingredients.

METEOROLOGICAL OBSERVATIONS.

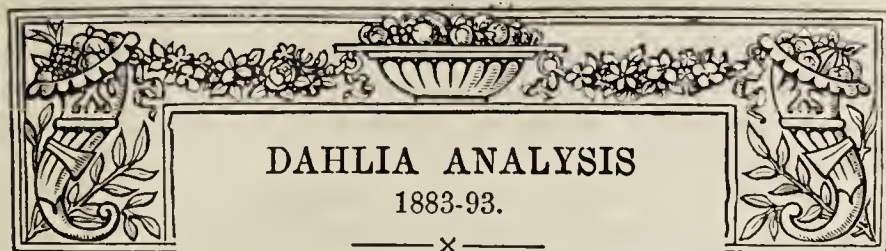
OAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude, 111 feet.

DATE.		9 A.M.					IN THE DAY.				Rain.
1894.	March.	Barometer at 32°, and Sea Level.	Hygrometer.		Direc- tion of Wind.	Temp. of soil at 1 foot.	Shade Tem- perature.		Radiation Temperature		
			Dry.	Wet.			Max.	Min.	In Sun.	On Grass.	
		Inchs.	deg.	deg.		deg.	deg.	deg.	deg.	Inchs.	
Sunday ..	4	30.065	38.1	37.6	N.W.	39.6	50.9	32.9	87.2	28.0	—
Monday ..	5	30.366	36.4	34.2	W.	39.7	49.4	29.9	91.1	22.1	0.121
Tuesday ..	6	29.659	46.9	42.1	W.	39.9	52.9	36.9	101.1	31.1	—
Wednesday	7	29.894	40.2	37.8	N.	40.2	48.8	34.3	78.2	26.7	0.020
Thursday ..	8	29.650	47.4	45.9	S.W.	40.8	48.7	40.2	53.1	36.1	0.151
Friday ..	9	2.4651	46.3	44.3	S.W.	41.0	50.8	38.1	69.0	29.4	0.084
Saturday ..	10	29.685	46.6	43.4	W.	41.9	54.7	43.1	84.4	36.7	—
		29.853	43.1	40.8		40.4	50.9	36.5	80.6	30.0	0.376

REMARKS.

- 4th.—Brilliant morning; cloudy at times in afternoon; clear night.
 5th.—Bright sun nearly all morning, generally overcast in afternoon; spots of rain after 5 P.M., and rain at night.
 6th.—Overcast early; much bright sunshine after 9 A.M.; slight shower at 1.30 P.M., and frequently cloudy with high wind in afternoon.
 7th.—Sunny morning; overcast after 3 P.M., and drizzle all evening.
 8th.—Almost incessant drizzle or rain till 3.30 P.M.; fine sunset and almost cloudless night.
 9th.—Drizzly and showery till 11 A.M., and after 2.30 P.M.; overcast between.
 10th.—Bright sun at intervals, but frequently cloudy.
 A week much resembling the previous one, but rather more sun and less rain.—
 G. J. SYMONS.



DAHLIA ANALYSIS

1883-93.

—x—

OWING to the untoward character of the season, the Exhibition held by the National Dahlia Society at the Crystal Palace in September last proved an unusually small one—in fact, there were fewer Show and Fancy Dahlias staged in competition than at any similar show for ten years. There were also fewer Pompons than at either of the three previous exhibitions, and not quite so many singles as in 1892. On the other hand, there was even a larger and finer display of the popular Cactus and Decorative Dahlias than at the preceding show.

I have this year only given the number of flowers and bunches staged at the last five National shows. It may, however, be of interest, if only for the sake of comparison, if I state that the average number of Show Dahlias staged in competition at the preceding six exhibitions was 898, and of Fancies 350.

	1889.	1890.	1891.	1892.	1893.
Shows (No. of blooms)	922	934	854	879	720
Fancies... .. "	274	283	286	340	270
Pompons (No. of bunches)	147	214	193	267	168
Cactus and Decorative .. "	74	156	158	209	264
Singles "	50	95	124	138	128

In the above short statement the number of flowers shown in the classes for three or more blooms of any one variety have not been included.

Of the Show varieties, which were singularly well represented last year, may be mentioned William Rawlings, J. T. West, T. J. Saltmarsh, and Burgundy. On the other hand there were many more sorts, but only one occupying even a moderately high position, which have seldom, if ever, been so indifferently shown. Among these must be included the premier flower Mrs. Gladstone, also Prince Bismarck, Mrs. Harris, Hope, John Henshaw, James Vick, and Earl of Ravensworth.

In previous analyses I have pointed out how many old favourites have passed out of the lists since the first tables appeared eleven years ago. There is, however, another side to this question equally surprising, and that is the consistent way in which many other old varieties have maintained their ground from year to year. Of course there are but few of these which are now to be seen on the exhibition table in the same numbers throughout the whole eleven years; but, nevertheless, there are a few even of these, while many others can show good records for the past five or more years. Then, again, a good many of the more modern varieties exhibit the same reliability as exhibition flowers. In confirmation of the above statements I will take the first twenty-four of the more established kinds on the list one by one, and give a few particulars respecting each of them, leaving out the varieties introduced since 1889 for separate consideration afterwards.

That marvellous Dahlia, Mrs. Gladstone, although by no means new, having been sent out ten years ago, still stands far in advance of all other kinds, and for eight seasons in succession has headed the list of Show varieties. Notwithstanding its poor form last year, the average for this variety, it will be observed, is half as large again as that for any of its rivals. Mrs. Langtry (1885), which comes second on the table, has gained greatly in favour during the last four years, previous to which it was only staged, as a rule, about half as frequently. William Rawlings (1881), too, has a high and steady record since 1888, but before that

year was comparatively little shown. Harry Keith (1886) is another exceptionally reliable flower. The same may be said of R. T. Rawlings (1886) which has scarcely varied at all during the last five years. The number of times it was staged at these five exhibitions is as follows: 28, 26, 25, 25, and 24. Colonist, J. T. West, and Willie Garratt (all 1887 varieties), show a very consistent record for four years. Henry Walton (1873) and James Cocker (1871), two of the oldest Dahlias on the list, are not quite as often exhibited now as they were eight or nine years ago, but nevertheless still hold good positions. In fact, at three of the last six shows the latter was to be found in twenty or more stands. The record for Maud Fellowes has varied but little since it came out in 1889. Ethel Britton, distributed as far back as 1880, is virtually as often set up now as it was eleven years ago. Mrs. W. Slack shows no sign whatever of decline since first tabulated in 1887. That dark variety, Prince of Denmark, still holds its ground, and in recent years has been almost as frequently exhibited as it was at the beginning of the period under review. T. J. Saltmarsh (1885), too, although it has had its good and bad seasons, appears as great a favourite as ever; indeed, at the last show was more largely staged than at any previous exhibition. Shirley Hibberd (1881) and Harrison Weir (1883) are also now as well shown as they were nine years ago. Goldfinder (1881), on the other hand, has not appeared as often in the last six years as formerly. Hon. Mrs. P. Wyndham (1881) once the leading flower in this section, has likewise only been shown about half the number of times during the past five years as in the preceding six. Miss Cannell (1881), on the other hand, has a fairly even record for the past ten years. The same may also be said of another old favourite, George Rawlings (1882). Lastly, we come to three 1879 varieties—Joseph Ashby, Prince Bismarck, and Clara. The first of these has a fairly even record for six exhibitions, while the other two show more or less decided signs of decline in recent years.

Five varieties sent out in 1890 will be found on the list. Of these newer sorts Duke of Fife has risen since last year from No. 34 to No. 13, John Hickling from No. 30 to No. 17, while Majestic appears in the table for the first time at No. 27. Alice Emily and Crimson Globe, on the other hand, were both less frequently shown than at the previous Exhibition. There is only one 1891 variety, Mrs. Humphries, which on its first appearance stands at No. 36. Four of the five 1892 sorts already occupy good places, and especially that grand new white variety John Walker, which rises since last year from No. 13 to No. 7, while William Powell will be found at No. 13, Arthur Ocock at No. 16, and Arthur Rawlings at No. 17, but George Gordon at only No. 44.

Mrs. Saunders (1872) still takes the lead of all the Fancies, but owing to the poor appearance it put in last year is closely pressed by Rev. J. B. M. Camm (1873). I venture to predict the final triumph of the latter variety owing to its steadier record—which has at the last seven shows only varied from 19 to 23. Both of these old sorts, however, are threatened by Mrs. John Downie and Matthew Campbell, both of which were sent out only in 1889. Duchess of Albany (1884) has a very even record for six years, showing it to be a reliable kind to grow. Frank Pearce (1886) has also done well since first generally cultivated three years ago. Peacock (1877) shows scarcely any variation for nine years. Henry Eckford (1886) on the other hand is somewhat more irregular in its records, while Gaiety (1879) is not now nearly as popular as an exhibition flower as formerly, and the same may be said of Mrs. N. Halls. Dorothy (1888) was exceptionally well shown last year. Chorister (1881) has its ups and downs, but is still nearly as frequently staged as ever, and the same remark applies to Rebecca (1883).

There are five new Fancies on the list this year. Of the two 1890 varieties T. W. Girdlestone has fallen since last year f. om

No. 9 to No. 13, while Buffalo Bill on its first appearance takes up a position just under it at No. 14. Dandy, No. 20, sent out in 1891, is also tabulated for the first time. Comedian and Mrs. Ocock, distributed in 1892, remain as before at the bottom of the table.

I append as usual select lists of varieties in the other sections of the Show. The Pompons have been again arranged very much on the same lines as the Shows and Fancies in the table. The changes in the Cactus, Decorative and single Dahlias are, however, so rapid that I have thought it better this year to place the different varieties according to the number of times they were set up at the last Exhibition alone, instead of attempting to arrange them according to their average performances at several shows.

POMPONS.—E. F. Junker, Darkness, White Aster (Guiding Star), Favourite, Grace, Whisper, Isabel, Phœbe, Admiration, Lady Blanche, Arthur West, Red Indian, Rosalie, Leila, Dora,

Eva, G. Brinckman, Tommy Keith, Fairy Tales, Mabel, Eurydice, Cupid, Gem, and Golden Gem. There are three 1893 varieties on the list—Arthur West, Eva, and Tommy Keith.

CACTUS.—Duke of Clarence, St. Catherine, Marchioness of Bute, Juarezii, Bertha Mawley, Cannell's Favourite, Countess of Radnor, Delicata, Kynerith, Lancelot, Robert Cannell, Professor Baldwin, Baron Schröder, Beauty of Arundel, Countess of Gosford, Josephine, and Kaiserin.

DECORATIVE.—Robert Mayher, Amphion, Black Prince, Countess of Pembroke, Harry Freeman, Mrs. Douglas, Mrs. Hawkins, Beauty of Brentwood, Honoria, Empress of India, and Millie Scupham.

SINGLES.—Gulielma, Miss Roberts, Amos Perry, Duchess of Albany, James Scobie, Victoria, Cleopatra, Miss Henshaw, Duchess of Anhalt, Duchess of Fife, Eclipse, Miss Glasscock, Miss Gordon, W. C. Harvey, and Yellow Satin.—E. M., *Berkhamsted*.

SHOW DAHLIAS.

Position in Present Analysis.	Average Number of Times Shown.	No. of Times Shown in 1893 in True Relative Proportion to the Average.	Name	Date of Introduction.	Raiser's or Introducer's Name.	Colour.
1	41.3	37	Mrs. Gladstone	1884	Hurst	Pale blush
2	27.0	20	Mrs. Langtry.....	1885	Keynes	Cream and crimson
3	26.7	29	William Rawlings	1881	Rawlings	Crimson purple
4	26.3	29	Harry Keith	1886	Keynes	Rosy purple
5	25.6	24	R. T. Rawlings	1886	Rawlings	Clear yellow
6	22.0	20	Colonist	1887	Keynes	Chocolate and fawn
7	21.0	21	John Walker	1892	Walker	White
8	19.5	22	J. T. West	1887	Rawlings	Yellow and purple
8	19.5	20	Willie Garratt	1887	Garratt	Bright cardinal
9	17.1	17	Henry Walton	1873	Keynes	Pale yellow and scarlet
10	17.0	16	James Cocker	1871	Keynes	Purple
10	17.0	18	Maud Fellowes	1889	Fellowes.....	Pale pink, shaded purple
11	16.5	16	Ethel Britton	1880	Keynes	White and purple
12	15.9	15	Mrs. W. Slack	1886	Keynes	Blush white and purple
13	15.0	15	Duke of Fife	1890	Keynes	Rich cardinal
13	15.0	13	Prince of Denmark	1881	Fellowes.....	Dark maroon
13	15.0	18	T. J. Saltmarsh	1885	Rawlings	Yellow and chestnut
13	15.0	15	William Powell.....	1892	West	Primrose yellow
14	14.0	16	Shirley Hibberd	1881	Rawlings	Dark crimson
15	13.7	15	Harrison Weir	1883	Rawlings	Yellow
16	13.0	13	Arthur Ocock	1892	Rawlings	Reddish orange
17	12.0	12	Arthur Rawlings	1892	West	Deep crimson
17	12.0	12	John Hickling	1890	Keynes	Clear bright yellow
18	11.7	15	Goldfinder	1881	Fellowes.....	Yellow and red
19	11.4	10	Hon. Mrs. P. Wyndham	1881	Keynes	Pale yellow and rose
20	11.0	13	Miss Cannell	1881	Eckford	Cream and crimson
21	10.5	10	George Rawlings	1882	Rawlings	Dark maroon
22	10.0	9	Joseph Ashby	1879	Turner	Shaded orange
22	10.0	4	Prince Bismarck	1879	Fellowes.....	Puce
23	9.6	9	Clara	1879	Rawlings	Rosy peach
24	9.5	6	Mrs. D. Saunders	1888	Rawlings	Pale, edged rose
25	9.4	9	Crimson King	1887	Keynes	Deep crimson scarlet
26	9.1	12	Burgundy	1877	Turner	Dark puce
27	9.0	9	Majestic	1890	Keynes	White, edged purple
28	8.9	2	Mrs. Harris	1873	Harris.....	White and lilac
29	8.7	9	Glowworm	1889	Turner	Bright orange scarlet
30	8.3	5	John Standish	1872	Turner	Crimson
31	8.0	1	Hope	1883	Keynes	Light rosy lilac
31	8.0	7	Mr. Harris.....	1881	Rawlings	Crimson scarlet
32	7.8	4	John Henshaw	1883	Rawlings	Ruby crimson
33	7.5	9	William Keith	1888	West	Dark plum
34	7.3	4	James Vick	1881	Keynes	Purplish maroon
35	7.2	9	Mr. Glasscock	1886	Rawlings	Purple
36	7.0	0	Earl of Ravensworth	1883	Harkness	Lilac
36	7.0	7	Mrs. Humphries	1891	Humphries.....	Light ground, shaded pink
37	6.9	4	Imperial.....	1883	Keynes	Purple, shaded lilac
38	6.8	6	Nellie Cramond.....	1888	Keynes	Purple, shaded cerise
39	6.7	6	Sunbeam	1881	Fellowes.....	Buff
40	6.4	5	Flag of Truce	1868	Wheeler	White and lilac
41	6.2	5	Queen of the Belgians.....	1887	Rawlings	Cream and pink
42	5.7	2	Alice Emily	1890	Keynes	Buff yellow
43	5.5	5	Crimson Globe	1890	Keynes	Crimson
44	5.0	5	George Gordon	1892	Rawlings	Bright crimson

FANCY DAHLIAS.

Position in Present Analysis.	Average Number of Times Shown.	No. of Times Shown in 1893 in True Relative Proportion to the Average.	Name.	Date of Introduction.	Raiser's or Introducer's Name.	Colour.
1	21.4	14	Mrs. Saunders	1872	Turner	Yellow and white
2	21.0	23	Rev. J. B. M. Camm	1873	Keynes	Yellow and red
3	20.0	24	Mrs. J. Downie	1889	Turner	Orange and scarlet
4	18.0	17	Duchess of Albany	1884	Turner	Orange and crimson
5	17.5	20	Matthew Campbell	1889	Keynes	Buff and crimson
6	16.3	13	Frank Pearce	1886	Rawlings	Rose, striped crimson
7	11.1	11	Peacock	1877	Turner	Maroon and white
8	10.2	6	Henry Eckford	1886	Rawlings	Yellow and red
9	9.5	7	Gaiety	1879	Keynes	Yellow, red, and white
10	9.0	6	Mrs. N. Halls	1881	Rawlings	Scarlet and white
11	8.4	15	Dorothy	1888	Keynes	Fawn and maroon
12	8.3	4	Chorister	1881	Keynes	Fawn and crimson
13	8.0	8	Rebecca	1883	Keynes	Lilac and crimson
13	8.0	6	T. W. Girdlestone	1890	Keynes	Lilac and maroon
14	7.5	12	Buffalo Bill	1890	Keynes	Buff, striped vermilion
14	7.5	8	Professor Fawcett	1881	Keynes	Lilac and brown
15	7.2	6	Flora Wyatt	1871	Keynes	Orange and red
16	7.1	4	George Barnes	1878	Keynes	Lilac and crimson
17	6.7	7	Henry Glasscock	1875	Keynes	Buff and crimson
18	6.6	8	Edmund Boston	1887	Keynes	Orange and crimson
19	6.5	9	James O'Brien	1881	Keynes	Yellow and crimson
20	6.0	6	Dandy	1891	Keynes	Orange and crimson
20	6.0	5	Hugh Austin	1881	Keynes	Orange and red
21	5.0	5	Comedian	1892	Keynes	Orange and crimson
21	5.0	0	Mrs. Ocock	1892	Rawlings	Yellow, crimson, and white

MASTERING THE ONION MAGGOT.

I AM very glad to note "W. S. E.'s" article on page 159, on the above subject, and hope to see it thoroughly discussed in the pages of the *Journal of Horticulture*. Having been very successful in battling with the Onion maggot until the past season, I offer a few remarks on my method of dealing with it. I consider it is very little use to put anything into the soil as a preventive of the maggot, seeing the fly deposits her eggs on the young Onion tops, and there the larvæ are hatched, and from there they slip down to the base of the bulb, to begin their depredations on the plant. The method I have followed is to have the Onion seed sown as early in the spring as the soil will admit, and as soon as the young plants are well through the ground I give a slight dressing of nitrate of soda, about an ounce to the square yard, followed by a similar quantity about a month afterwards. As soon as the salt begins to work in the soil it puts new life into the young plants, and by the time the fly emerges from the pupa they are strong, and appear able to resist the attack. About the end of May, onwards until July or August, I dust the plants over with a small quantity of soot once or twice a week, occasionally substituting a dressing of basic slag, choosing a wet or dewy night for the operation. This I consider the fly distastes, and it consequently acts as a preventive of egg deposition. I keep a sharp look out, and if any of the plants show signs of being attacked they are carefully dug up and burnt.

I attribute my partial failure in not getting a full crop the past season to want of a little forethought with the manure applied the previous autumn. This manure consisted of ashes and refuse from the house, along with ordinary stable manure; among the refuse from the house pieces of bad meat had been thrown out, and it very soon became a moving mass of maggots. This got mixed with the manure which was applied to the soil for the Onion crop, and from thence the flies emerged in full force the following summer. Whether I am right in supposing this, or whether it was a lack of energy in coping with it early enough, or owing to the dry season, I am unable to tell, but all our efforts to wholly check its ravages seemed to have little effect. I have followed the method above described for a number of years, and have always been successful in obtaining an abundant crop of sound bulbs, with the exception of the past season.—N. B.

THIS subject, which "W. S. E." has brought to the front, is one which deserves the serious consideration of all gardeners, for it is deplorable to see ravages made in many a promising Onion

bed by this insidious foe. Each year the wail goes up from sufferers in all parts of the country, but there are some districts in which many cultivators consider it impossible to keep this enemy at bay, for having tried every remedy they could think of themselves, or hear of from others without satisfactory results, they become firmly convinced that there is neither preventive nor remedy, at least in their district, for such a deplorable state of affairs.

I am not in the least inclined to take such a dismal view of the matter, although I am well aware that when once the maggots have bored into the stems of the young plants it is a most difficult matter to prevent the loss of a great part of the crop. I am also firmly convinced that by the aid of that grand fertiliser and purifier of the soil, "soot," the Onion maggot may be mastered, and therefore included in the category of vanquished if not banished foes.

Some years ago I well remember Mr. H. W. Ward of Longford Castle Gardens having a lengthened and somewhat heated controversy with another writer on this subject, and how sturdily he stuck to his guns in asserting the efficiency of soot as a preventive of maggots. This he was thoroughly justified in doing, for during the six years that I acted as his foreman at Longford I neither saw a patchy Onion bed nor an Onion maggot in the gardens, and until I find soot fail to effect the desired result I shall stick to it as a sovereign remedy against a dreadful pest.

When I took charge of the gardens here about three years ago I found the Onions badly infested with maggot, fully one-half of the plants being destroyed before they had grown to a sufficient size to be secure against further loss. Although I dusted the bed freely with soot I cannot say that it did much to arrest the ravages of the enemy, as the application was given too late to do that. When they have bored into the stems these maggots are so effectually protected that I think it almost impossible to kill them without destroying all the affected plants too. Profiting by the experience just recorded I determined to take extra trouble in preparing the soil the following season. I commenced by giving the ground a dressing of soot just before it was dug in the spring, at sowing time another heavy dressing was applied before the drills were drawn, the surface soil of the whole bed being completely covered so that it appeared as one black mass; this was thoroughly incorporated with the soil by means of a rake. After the drills were drawn a layer of dry burnt refuse half an inch in thickness was placed along the drills. When the Onion tops were about 3 inches in length another slight dusting with soot was given during showery weather. By carrying out this simple treatment I had the satis-

faction of not being able to discover a single maggot or unhealthy plant.

Last year I thought I would try to master the maggot without such a lavish use of soot at sowing time, and gave only a moderate dressing of it, and discontinued the applications at digging time, and shortly after the Onions appeared. Now note the result. When the young plants had attained a height of from 4 to 6 inches a few of them seemed to fail to make progress. A close examination revealed a few maggots in quite a young state beginning to bore into the stems of the Onions. Every unhealthy looking plant was pulled up and burnt, a thorough dressing of soot given to the bed all over, not avoiding the tops in the least. This was done in showery weather, but had the rain not occurred at an opportune time the bed would have been watered to prevent the plants from being injured in the event of bright sunshine following the application of soot.

No further trouble was experienced with the maggot beyond pulling up a sickly plant here and there, the total loss being insufficient to make the bed in the least patchy, in fact several visiting gardeners remarked "You don't seem to have suffered in the least from maggot." If soot employed as a preventive is successful in one instance why not in another? In truth, I believe it will always be so if a heavy dressing is given and thoroughly mixed with the soil. Hitherto I have made no minute calculation as to the amount of soot used per rod, but in the course of a few days we shall again be sowing, I will carefully measure the quantity used. Liberal dressings seem to be certain death to all minute insects on the surface of the soil, and probably to eggs as well. If, therefore, the insects are destroyed before they emerge from the soil to deposit eggs on the plants the greatest danger is avoided, but we have still to fight against those insects which are lying in the soil of adjoining plots not dressed with soot. My opinion is that a dressing given soon after the Onions appear (which is the critical time when the eggs are deposited) renders that quarter so distasteful to the winged enemy that they altogether avoid it.

The practice of autumn sowing has no doubt much to recommend it, as it must be more difficult for the small maggots to penetrate the comparatively hard stems which the plants resulting therefrom possess. Many cultivators also pin great faith in the application of spent hops as a mulch, and it seems feasible that any material of that description must to a great extent prevent the newly hatched maggots from reaching the plants. This is a point upon which the experience of Journal readers would be of special interest. But my own opinion is, that soot intelligently and liberally used, affords the best known means of mastering this enemy, and it also has the strong recommendation of being a splendid fertiliser which is always within reach.—H. DUNKIN.

PROBABLY no crop in kitchen gardens during the season of 1893 caused us so much anxiety as the Onion crop. From all quarters, at least in this neighbourhood (Godstone, Surrey), the same cry is to be heard—"No Onions; the maggot quite ruined them last summer." That the question of "cure," or better still "prevention," from the sad havoc caused by the Onion fly, will be eagerly read by numerous gardeners in the pages of the *Journal of Horticulture* is certain, and that each proffered receipt of sound reason and easy application it is hoped will be as readily carried into effect. It behoves each and all of us to impart any useful hint that has been the means of assistance to ourselves in saving a good crop of that most excellent esculent, which to all classes is second only to the Potato for usefulness.

Previous to last autumn I had not sown any of the so-called spring Onions at that season, always having relied on the Tripoli kinds; but last August I sowed both kinds side by side, and all have come through the winter satisfactorily. How they will ultimately behave themselves I hope to refer to later on; the present conjectures of many are that they will "bolt." But to revert to the spring sowings, I will describe our *modus operandi*, which has carried us safely through the last four seasons.

Our land is light and sandy, so we manure and trench very early in the autumn to allow the soil to settle firmly before the spring, solid cow manure being used. The ground requires little other preparation in the spring beyond a good dressing of soot well raked in, and some hours of treading to obtain sufficiently hard surface. We sow in drills 2 inches deep and 12 inches apart from row to row. After sowing the seeds are well trodden in, then lightly raked over for appearance sake. Our dates for sowing is the first opportunity after the middle of February, this season to-day, March 5th.

From now till the plants are large enough for thinning we have but little to dread; but whether or not the enemy makes its appearance, we commence operations to ward off the attack by

dressing over the beds with a solution of softsoap and petroleum, by thoroughly dissolving the soap in boiling water, in quantity about the size of a hen's egg, and half-pint of petroleum to ten gallons of water, preferably soft, using moderately fine rose to waterpot, so as to thoroughly moisten each plant, choosing quiet evenings, and repeating the operation every few days for a month or six weeks. Last season we went over the beds on six different occasions, the Onion fly being so prevalent in this part of Surrey.

The result of the practice is that we have at the present time many bushels of good Onions, a fair sample of which I enclose. Thorough ripening, with a dry airy structure to hang them in after being properly roped, are necessary for their long keeping.—J. FRIEND.

[The bulbs received of Veitch's Brown Globe and Main Crop are in size, shape, and firmness all that could be desired.]

As far as my experience goes, I think that those correspondents who have obligingly given information on mastering the Onion maggot by applications of soot, lime, petroleum, and wood ashes, during various stages of cultivation, have hit upon right methods of subduing, if not always preventing the enemy. "W. K. W." in his admirable remarks on page 198 lays stress on good cultivation. I endorse what he says with regard to autumn manuring, trenching, liming, early and thin sowing, followed by the frequent hoeings and stimulating dustings to help the plants along. All this tends to that desirable robustness in the stems which defies the fly; but even with this the plants are often exposed to danger from unexpected quarters.

Good cultivation reaches further than the manuring, digging, and tilling of the particular plot of ground on which the Onions are grown. It is my firm conviction that the surroundings have more to do with Onions being attacked by the maggot than is generally conceded. For instance, every good cultivator is aware of the importance attaching to the cleanliness of the soil and its freedom from weeds between the rows of plants. Is it not reasonable to infer that if this is a danger in the immediate vicinity it is very little less so at a distance where, it may be, weeds are growing rampant or useless vegetables provide a cover for vermin and insects? Suppose Onions are growing within easy distance of a tall overgrown hedge, which may also be choked with long grasses and perennial weeds, here is a splendid vantage ground for the Onion fly, whence it may advance upon a crop at an opportune time, when perhaps the vigilance of the gardener was relaxed for a while. In my opinion, hedges unless scrupulously trimmed and kept very clean are a nuisance to kitchen gardens. The same may be said of many trees. Overcrowded plantations harbour insects innumerable, and breed them for attacking gardens far and near. A considerable amount of good might be done by the forester in helping the gardener: If the high cultivation adopted by many gardeners were only imitated and carried out by their neighbours and others there would be less of the Onion fly and many other detrimental insects. Extend the circle of good cultivation. It will keep many enemies at bay. Is there not something in this?—E. D. S.

THE ORIGIN OF CARNATION SOUVENIR DE LA MALMAISON.

I HAVE recently noticed in your columns inquiries as to the origin of this fine Carnation, and my name mentioned in connection with it. I think it was in 1860 that I had a plant of it from Mr. Young, Assistant Secretary to the Royal Caledonian Horticultural Society, and I have asked him if he knows its origin. He informs me that a gentleman in Fife brought the seed from which it was raised from France, and in 1855 Mr. Young obtained a plant and was the first to flower it. About the year 1860 he gave plants of it to the late Mr. Trail of Aberlady, the late Mr. Lees of Tynninghame, and myself, hence it was largely grown about Edinburgh and East Lothian for several years before it was known in the south. The pink variety was a sport obtained by Mr. Thomas Dunn of Musselburgh. The variety known as Lady Middleton, and probably the finest of the strain, was a sport got and propagated by Mr. Young, and was sent out by the late Mr. Thomas Methven of Edinburgh. This latter is the sweetest of any of them, and Mr. Young has grown blooms of it nearly 6 inches in diameter.—DAVID THOMSON, *Drumlanrig Gardens*.

[We are much obliged to our correspondent for obtaining, and Mr. Young for supplying the foregoing information, which will be of interest to many growers of the popular "Malmaisons." The variety was offered in Messrs. E. G. Henderson's catalogue in 1860.]



PHAIUS MARTHÆ.

AMONG the many Orchids exhibited at the meeting of the Royal Horticultural Society, on the 13th inst, but few attracted greater attention than Phaius Marthæ. This is a new hybrid, being the result of a cross between *P. Blumei* and *P. tuberculosus*, and was shown for the first time on the occasion mentioned by Messrs. F. Sander & Co., St. Albans. The sepals and petals are buff coloured, the lip very pale pink with a yellow stripe extending into the throat, the sides being brown, veined yellow. Fig. 36 represents this beautiful Orchid.

CORYANTHES MACRANTHA.

IN sending a flower of this remarkable Orchid a gardener requests us to publish a few notes concerning it, which we do with pleasure:—"In this and others of the genus the lip is formed like a 'bucket,' one portion of which secretes the fluid that falls into the lip and remains there until evaporated, or it sometimes fills the 'bucket' and overflows by a spout. *C. macrantha* has projections upon the lip, which tempt bees to gnaw them; and Dr. Cruger has observed that 'the bees may be seen in great numbers, disputing with each other for a place on the edge of the hypochil. Partly by this contest, partly perhaps intoxicated by the matter they are indulging in, they tumble into the 'bucket' half full of fluid; they then crawl along in the water towards the anterior side of the 'bucket,' where there is a passage for them between the opening of this and the column. If one is early on the look out, as these bees are early risers, one can see in every flower how fecundation is performed. The humble bee in forcing its way out of its involuntary bath has to exert itself considerably, as the mouth of the epichil and the face of the column fit together exactly, and are very stiff and elastic. The first bee, then, which is immersed will have the gland of the pollen mass glued to its back. It passes out with this, and perhaps enters the same or another flower, when the pollen masses are placed directly upon the stigma in coming out as before."

ORCHIDS NEAR TOWNS.

Now that the population of the country is so densely massed in great centres it becomes a matter of importance to secure plants that will thrive in the neighbourhood of the smoke-producing cities, and probably the adaptability of many Orchids for culture in such positions has tended largely to increase their popularity. In the suburbs of most of our largest towns collections of Orchids have been formed by wealthy merchants and others, in many cases of remarkable extent and value. Beyond these, smaller collections of cool house Orchids are very rapidly increasing in number, and the *Odontoglossum* house is becoming almost indispensable in many gardens. The dweller in towns certainly has more difficulties to contend with in the culture of Orchids than those who are favoured with a pure atmosphere free from the noxious smoke and fogs that prove so injurious to most plants.

It is strange that the London nurseries, where Orchids receive special attention, are all within the smoke radius, yet visitors to those establishments are well aware of the cultural successes achieved in them. Some of the best grown Orchids that can be produced are there found, and amateurs have learned from this that in the suburbs, a few miles from the smokiest portions of the metropolis, they can readily satisfy themselves with a house of Orchids, and obtain their beautiful flowers with comparative ease. Many of these amateur growers frequent the sale rooms, purchasing both imported and established plants until their houses are filled or their purses exhausted; then some are sold, and occasionally the whole collection is disposed of, finding a home with other rising orchidists. There is thus a constant change, but there is no question that the total number of Orchid collections has increased very greatly in recent years, and this is seen in a marked degree around the metropolis. In almost every direction, but especially to the south and west, are gardens containing Orchids in varying

numbers and interest, but all including specimens possessing some attractions, and where specialities are made of particular genera displays of surpassing beauty are frequently seen.—A. C.

PROPOSED VIOLA CONFERENCE.

COMMUNICATIONS have reached me as to the desirability of holding a conference of raisers and introducers of new *Violas* during the coming season, with a view to the exhibition of seedling varieties, to be adjudicated upon by specially appointed judges, who thoroughly understand the *Viola*, and have an acquaintance with varieties already in commerce.

The very large number of new introductions yearly is a source of great anxiety to growers of these flowers, who feel strongly that many inferior forms are being introduced, and scarcely dissimilar to those in commerce. Although it cannot be made compulsory that all seedlings



FIG. 36.—PHAIUS MARTHÆ.

should be sent, still I hope that as *Viola* experts will be the judges, it will be at once seen that certificates granted to any seedlings would carry great weight from such a source. Some of the leading *Viola* growers have urged me to take the matter in hand, and I willingly do so. I feel strongly that we are being overdone with new *Violas*, and those who have sterling new varieties would welcome the recognition of their merit from such a conference, and the great publicity which would be given to these awards through the gardening Press.

An admirable opportunity is afforded for such an Exhibition and Conference in connection with the Midland Counties Carnation and Picotee Society's next Exhibition, which will take place on Saturday, August 4th, at the Birmingham Botanical Gardens at Edgbaston; but I suggest the Conference being held on the afternoon and evening of Friday, the day previous, and the flowers remaining for the Carnation Exhibition on the following day, thus affording those who attend the Conference from a distance an opportunity of seeing the superb display on Saturday, and returning to their homes in good time. Raisers of seedling Pansies are also invited to send blooms for certificates, as Pansy experts would be appointed to inspect and adjudicate upon them; three blooms of each variety would be necessary.

I shall be glad if raisers and growers of *Violas* and Pansies will inform me by as early a post as possible if they will endeavour to attend such a Conference, and if we may count upon their support in sending seedlings, at least three blooms of each, as well as blooms of any new sorts recently introduced or raised by themselves or others. Flowers could be forwarded by post to reach the Botanical Gardens, Edgbaston, Birmingham, on the Friday morning by those who cannot make it convenient to attend, and every accommodation will be at hand for exhibiting the blooms.

All exhibitors of seedlings and new flowers would have a copy of the report sent to them. Early replies will greatly oblige addressed to—WILLIAM DEAN, *Dolphin Road, Sparkhill, Birmingham*.



EVENTS OF THE WEEK.—The only event of particular interest, other than auction sales, to horticulturists advertised to take place in the metropolis during the ensuing week will be the meeting of the Committees of the Royal Horticultural Society at the Drill Hall, James Street, Westminster, on Tuesday, the 27th. As mentioned in another paragraph, the Narcissus Committee will also meet, and an interesting display will doubtless be forthcoming.

— **THE WEATHER IN LONDON.**—Frosts have been prevalent in the metropolis since publishing our last issue. On Sunday morning several degrees of frost were registered in suburban gardens, and a fog prevailed during the early part of the day. Monday morning was also foggy, but it cleared in the afternoon. Tuesday was fine, and Wednesday opened similarly, the sun shining brightly at the time of going to press.

— **WEATHER IN THE NORTH.**—A most welcome change has at last taken place in the weather, and the past week has throughout been pleasant and dry with the exception of slight showers in the evening or during the night. The days have generally been well interspersed with sunshine. On the 14th and the three following mornings frosts of from 4° to 7° were registered. This has enabled the farmers in the heavy clay land to get forward the sowing of the Bean crop, a very important one in the district. On Tuesday, though the morning was dull, there was no appearance of a change for the worse.—B. D., *S. Perthshire*.

— **THE GARDENERS' ROYAL BENEVOLENT INSTITUTION.**—We understand that Sir Julian Goldsmid, Bart., M.P., has kindly undertaken to preside at the fifty-fifth anniversary festival dinner in aid of the funds of this Institution at the Hôtel Métropole on June 21st next.

— **ROYAL HORTICULTURAL SOCIETY.**—The next meeting of the Society will take place on Tuesday, March 27th, at the Drill Hall, James Street, Victoria Street, Westminster. Besides the Fruit, Floral, and Orchid Committees, the Narcissus Committee will meet for the first time this year at twelve o'clock, and it is hoped that members will notice this intimation. At three o'clock Mons. Maurice de Vilmorin of Paris will attend to read his paper on "The Rare Trees and Shrubs in the Arnold Arboretum, United States."

— **GREAT AUTUMN FRUIT EXHIBITION.**—A correspondent writes:—"It was whispered about at the Palace Show last Saturday that a great fruit exhibition is to be held at the Crystal Palace this year under the auspices of the Royal Horticultural Society; do you know anything about it?" We can only add that we have heard of similar "whispers" at the last Westminster Drill Hall meeting, and of one person telling another in quiet corners about the project, ending with the injunction, "Don't say anything about it." So far as we are able to trace the origin of the rumour, it did not emanate from a person in an obscure position, and we hope it is true. If the Royal Horticultural Society and the Crystal Palace Company were to put forth their strength in the direction indicated, there could only be one result—a grand exhibition in the best place in the kingdom for holding it.

— **ANTWERP EXHIBITION, 1894.**—We have received from the Horticultural Department of the Antwerp Exhibition the particulars of the programme and the conditions with which intending exhibitors must comply. The Exhibition is to extend from the 5th of May to the 31st of October of the present year. In the class of Ornamental and Decorative Gardening application should have been made by intending exhibitors before March 20th; in that of Flowering and Non-flowering Plants, Fruits, and Vegetables it must be made before April 15th; in that of Cut Flowers before June 10th; and in that of Pomology before September 10th. The Exhibition of Flowers, Fruits, and Vegetables will be held on May 13th, 14th, and 15th; that of Cut Flowers on the 1st and 2nd of July; that of Pomology on the 7th, 8th, and 9th of October; while the outdoor exhibits in the first-mentioned class will remain during the course of the Exhibition. Under the term "Pomology" are included general exhibits of table fruits, exhibits of packed fruits for export, plants for wholesale export, and Dahlias. Mons. Alphonse de Cock, President of the horticultural section, Rue Montigny, Antwerp, will furnish full particulars and schedules on application.

— **LIABILITIES OF MEMBERS OF COMMITTEES.**—This is a question on which it is very desirable to have a definite opinion. The members of an executive committee are, I understand, responsible for the outlay which they have voted; are the members of a general committee also liable on the ground that they have allowed their names to be published as supporters? In the case of a guarantee fund having been raised, would a deficit have to be paid by the executive and general committee before applying to the guarantee fund? The law is full of startling surprises to the ignorant, and it seems desirable that intending members should ascertain their position before giving their names. The success of shows seems so uncertain that a deficit appears almost a certainty.—F. R. H. S.

— **NATIONAL POMOLOGICAL SOCIETY.**—There is a National Rose Society, a Chrysanthemum Society, and many others, but Pomology, which is of very great national importance, is not at present represented. Surely the time has come when a National, soon to be formed into a Royal, Pomological Society should be established. Fruit culture in the immediate future is an increasing interest, and a Pomological Society will be an ever-growing power for good in the community. Perhaps your influence in supporting and advancing the claims of a future Royal or National Pomological Society may direct public attention to this very desirable object.—T. FRANCIS RIVERS. [Mr. Rivers' note arrives as we are preparing for press. The subject is eminently worthy of consideration, and we shall be glad to have the views of those of our readers who are interested in fruit culture on the proposition.]

— **SOUTHERN PINK SOCIETY.**—A number of admirers of the laced florists' and garden Pinks have taken the necessary steps to revive the exhibition of these flowers, formerly held in London at the Royal Aquarium, Westminster. A Committee, with power to add to their number, has been formed to carry out the same, and a subscription list to provide the necessary prizes, which it is proposed should not be large in amount, opened. It is proposed to hold the exhibition in the week commencing June 11th, and it will probably take place either in connection with the meeting of the Royal Horticultural Society on June 12th, at the Drill Hall, or at the Royal Aquarium on the following day, June 13th. Mr. B. Wynne, 1, Clements Inn, Strand, London, W.C., is the Secretary and Treasurer, to whom any suggestions or assistance in carrying out this work should be made.

— **WEATHER AND VEGETATION IN IRELAND.**—This month, in comparison with March of last year, contrasts unfavourably. Cold rains, with showers of hail and sleet interspersed, retards the seed-sowing, which one is more anxious to be about owing to the sound and sensible views lately promulgated in these pages. Each twenty-four hours brings moisture in some form, the last being snow, and high winds varying in intensity, from stiff "sou'-westers" to half gales, carry on the programme, which from constant rehearsal begins to get somewhat monotonous. Yet here, near Dublin, vegetation is slowly moving, fruit bushes are assuming a tint of green, the advance guard of the Narcissi are well up to time, and in the absence of severe frost things look fairly promising, though "the stormy winds do blow."—E. K.

— **THE CULTIVATION OF DAFFODILS.**—"One of the Earliest Harbingers of Spring" was the title given to the Daffodil in a lecture delivered by Mr. J. Lewis upon that flower, on Thursday evening in last week, at a meeting of the Brighton Horticultural Society. Mr. Lewis is an enthusiastic amateur gardener, and it appeared that Daffodils were his special hobby. We learn from a Sussex paper the subject was dealt with in a most interesting and intelligible manner, whilst the lecture was illustrated by a beautiful display of Daffodils which Mr. Lewis had brought with him. Mr. Lewis began by saying that probably no spring bulb was more popular than the Daffodil, and it might be grown in almost every situation. As a proof of its abundance he said that Great Britain was divided by botanists into 112 sections, in seventy-six of which the Daffodil grew wild, and he observed that it was mentioned by English writers from the earliest periods. The Daffodil belonged to the genus *Narcissus*, and in structure was of the *Amaryllis* type. About 500 varieties were known, divided into three groups, according to the length of the trumpet, or the bell-shaped portion of the flower. He dealt with the question of hybrids and seedlings, and said that it was unfortunate that most of the raisers of hybrids had left no account of their methods. As to cultivation, the Daffodil was very easy to grow. In planting, manure should be avoided as much as possible, and the flower preferred a shady position. It should always be planted very early in the autumn, never later than September, and in good well dug ground, where it would be undisturbed for years.

— THE BALLARDS, CROYDON.—We are requested to announce that there is no vacancy for a gardener at The Ballards, Croydon.

— COLONIAL BOTANIST FOR QUEENSLAND.—We learn from the "Kew Bulletin" that Mr. F. M. Bailey, F.L.S., the abolition of whose post by the Government of Queensland was recorded in these pages some time ago, has been re-appointed Colonial Botanist.

— DAFFODILS AND DRY SUMMERS.—Mr. Arnott, on page 202, asks for experience similar to that of his Gloucestershire correspondent on the above subject. My soil is very dry, sandy, and hot. Nearly all my clumps of Narcissi are coming blind; the common *Telamonius plenus* appears to be the only exception.—J. A. W.

— FINE WHITE CYCLAMENS.—Mr. W. Rapley, The Gardens, Harrow Weald House, Stanmore, sends us blooms of Cyclamens of great excellence, especially as they are from plants sixteen months from the seed, averaging sixty blooms each. Mr. Rapley finds it best to sow seed every year, and not let the plants cease growing for a moment. The variety in question is Sutton's White.

— ONIONS.—I have faith in a fair sprinkling of nitrate of soda, applied previous to rain, as a stimulant to help the "inguns" by that critical, standstill stage, which they sometimes appear to have, as if they were waiting for the maggots. Soot is excellent, but I find the *Chrysanthemums* are able to take nearly all I can get, and probably many who have more chimneys have more "mums" too.—E. K.

— "YALLAMANDAS AND WHITE ENEMIES."—"Please to send up for the table to night plenty of Yallamandas and white enemies." Such was an order brought to me by a white-capped servant maid, something less than two years ago. The first part of the order merely requires elision of the Y to suit all requirements. The "enemies" were of the *Japonica alba* type; and I think for both, as the misconstruer did not belong to the great order of gardeners, there was some excuse for the not inexpressive "murdering."—E. K.

— THE COUNCIL OF THE DURHAM, NORTHUMBERLAND, AND NEWCASTLE-ON-TYNE BOTANICAL AND HORTICULTURAL SOCIETY has decided to change the venue of their spring Show, which has been held in the Town Hall for many years. It will be held this year in the New Olympia, Newcastle, on Wednesday and Thursday, April 18th and 19th, and we understand that the general arrangement of the Show will be on a more artistic scale than formerly. The summer Exhibition of the Society will take place on July 18th, 19th, and 20th.

— PROTECTING SEEDS AND SEEDLINGS FROM BIRDS.—I have read and I hope gained information from the article upon seed-sowing on page 177 by Mr. G. Abbey, but my experience does not agree with his. I find Peas or other seeds coated with petroleum and red lead are only protected thereby until growth appears—no small matter—but then I find the birds destroy the seedlings just as freely as if the seeds had not been coated, thus making protection of some kind necessary to insure a crop. I should like to hear the experience of others upon the subject.—F. W. B.

— THE BLACK CURRANT BUD MITE.—It is nearly sixty years since the Currant bud mite made its appearance in this locality. Different "cures" were tried to get rid of the pest, but all were in vain. Every bush was then uprooted and consigned to the flames, but our neighbours looked on with apathy. It is unfair to allow careless people to foster nurseries of insects and fungoid pests to torment and harass their neighbours to the utter destruction of crops. The terror of the Colorado beetle put action in our authorities, yet they are passive respecting more destructive enemies than the beetle. It is but justice to ask that a law should be passed to prevent anyone harbouring destructive pests, and to compel them to apply proper means for their total destruction.—W. T., *Lanarkshire*.

— A NONAGENARIAN GARDENER.—Mr. J. W. Thomson of Haywards Heath informs us that he was ninety years of age yesterday (March 21st). Mr. Thomson was employed in the Royal Gardens in 1819, serving under George III. and succeeding sovereigns. He left the Royal service in 1830, and became head gardener at Syon House. Mr. Thomson informs us he was the first to flower *Vanda teres* there in 1833, and that he handed the flower to Her Majesty the Queen, who was then the Princess Victoria, about thirteen years of age. Mr. Thomson notes as curious that when the Queen visited Waddesden last year Baron Ferdinand de Rothschild handed Her Majesty a bouquet of the same Orchid, *Vanda teres*. We wish Mr. Thomson as many happy returns of the day as possible.

— THE WHOLESALE FRUIT AND POTATO GROWERS' BENEVOLENT SOCIETY.—We understand that the Duke of Bedford has kindly presented a cheque for 100 guineas to the Wholesale Fruit and Potato Growers' Benevolent Society.

— HEAVY RAINFALL.—The rainfall during February beats the record hereabout, so far as any authentic information can be got. Total fall 12.738 inches, which fell on twenty-six days. On six days there fell of that 7.550 inches.—G. McDougall, *Stirling*.

— DIVIDING HARDY PLANTS.—Those who have borders containing hardy plants that require renovating should lose no time in getting the work done. If delayed until April it frequently happens that the roots of the plants are injured, and growth consequently checked. Many kinds of hardy plants can be lifted and divided where it is necessary to increase the number. Edgings of Pinks, Thrift, and similar plants can be lifted and replanted if needful now, but avoid pulling them to very small pieces.—D. B.

— PRIMULA FARINOSA.—Although sometimes grown on rockeries this *Primula* is admirably adapted for growing in pots for the embellishment of the conservatory during the spring and early summer. The pretty lilac purple flowers which are borne in compact umbels on long stalks show up conspicuously above the silvery foliage. When cultivated in pots, however, the plants should not be subjected to a high temperature, and during the summer it is a good plan to plunge them in ashes outdoors in a comparatively shady place.—NOMAD.

— THE METROPOLITAN PUBLIC GARDENS ASSOCIATION.—It is gratifying to note that during the past year seven gardens and one playground were laid out and opened to the public by this Association, and other grounds, which they hope to open in due course, are partly prepared. In addition to this they have placed seats in several neighbourhoods and planted one district with trees. There is still much work to be done in the way of laying out disused burial grounds and securing open spaces when the necessary funds are forthcoming.

— RENOVATING FRUIT TREES.—Considering the ease with which many old fruit trees can be renovated it is astonishing that they are so frequently tolerated in gardens. Some years since I cut down several large Apple trees to within 2 feet or so of the main stem, and grafted each of the stumps of branches with scions of good varieties. These grew freely, and last year bore a fair crop of fruit. Readers who have unfruitful Apple or Pear trees should now graft them with choice varieties, and if properly done the results will be satisfactory.—N. P.

— RULE OF THUMB GARDENING.—I endorse the remarks of "A. D." (page 203) that "we want in all our gardening far more intelligence and less rule of thumb." According to my experience, many gardeners adopt rule of thumb methods without thinking what the results will be. In no instance, perhaps, is this more plainly demonstrated than in the mixing of composts for plants. Old-world gardeners were very precise in this matter, but it does not necessarily follow that practitioners of the present day should follow the same plan indiscriminately.—C. P.

— LILY OF THE VALLEY IN WOODS.—To many persons acres of Lily of the Valley in woods would form an interesting and pleasing sight, and one probably that it is not possible to see in other than a few parts of the country. About a dozen years ago I saw large breadths of this popular flower growing in the woods at Roche Abbey, near the Sandbeck Park, Rotherham, the seat of the Earl of Scarborough. Perhaps Mr. Summers, head gardener at the last named place, could furnish some particulars as to whether the Lily of the Valley exists now, and if the plants flower freely.—C.

— CONSERVATORY PILLAR PLANTS.—When making a call at Sundridge Park Gardens last November, I was much surprised to see two very fine plants of *Lasiandra macrantha* trained up the pillars, some 30 feet, in a cool conservatory, and covered with their beautiful purple flowers. Two other pillars were clothed with the white *Plumbago*, also in full beauty, and contrasting well with the rich colour of the former. In the same house is a large plant of *Bougainvillea glabra*, trained up a pillar and along the girders; it has for many years flowered freely, its principal requirement being a position where it will get full sun to thoroughly ripen its wood. I have seen it prove very unsatisfactory in a house where it made plenty of growth; but owing to it only getting the afternoon sun, seldom gave much flower. With respect to the improvement in colour, the best that I have seen was on a specimen exhibited last season that had been grown without heat.—J. H.

— THE EARL'S COURT EXHIBITION.—"Victim" writes to us on the non-payment of prize money due to him, and the withholding of any explanations bearing on the matter. His letter contains nothing new, and nothing would be gained by its publication. We refer our correspondent to the note of Mr. Frank Cant on page 201 of our last issue. Another correspondent writes:—"It would have been more dignified on the part of the managers of the shows to have made a frank explanation of the circumstances than to have taken refuge in a conspiracy of silence."

— SCHOOL CHILDREN AND FLOWER SHOWS.—The Committee of the Birmingham Chrysanthemum and Spring Flower Show Society always admit free on the second morning of the exhibitions, a large number of children from Deaf and Dumb Asylum and the Board and other schools. On the occasion of the spring flower Show, March 13th and 14th, nearly 4000 children were admitted from fifty-two schools. Ladies and gentlemen connected with the Kyrle Society superintend the children, who walk in single file, and see the entire Exhibition, then return to their schools.

— WHIN OR FURZE OR BOTH.—It is possible that the writer in the "Cornhill Magazine," from whose article the abstract to which "J. S. W." (page 201) alludes was made, meant by Whin the *Genista anglica* or "Petty Whin." Otherwise the drift of his contention has been misunderstood. Clearly that writer aimed at drawing some distinction between the "Furze" and the "Whin," though to many this may seem a distinction without a difference. "J. S. W." may fight it out with anyone who espouses what I perhaps mistook to be that writer's opinion. The opinion is not mine.—M.

— IRIS RETICULATA.—This beautiful bulbous Iris is now producing its flowers in some gardens, and where planted on rockeries, or in clumps in borders, produce a charming effect. According to my experience it thrives best in sheltered nooks on rockeries, and particularly so if planted in rich though light soil. The flowers, of a rich violet-purple, with dark veins and an orange coloured blotch, are very effective at this early season, and where not hitherto grown much has been missed. For cool greenhouses or conservatories this Iris and its forms are exceedingly effective when grown in pots.—C.

— HARDY PRIMROSES.—Of hardy flowers that are garden varieties and not species, perhaps the coloured Primroses are the very earliest and most gay. I looked in at the Bedford seed grounds a day or two since and found hundreds of plants profusely blooming in all colours, whilst a large bed of pure whites was a mass of snowy whiteness. These true Primroses must not be confounded with the later-blooming Polyanthus, for they flower most abundantly through March, the latter flowering in April and May. The white forms are mostly very fine; indeed, the flower is almost of the dimensions of those seen on the Chinese Primroses. When it is understood that these seed freely, can be readily raised from sowings made early in the autumn or the spring, and come into bloom finely the following season, it is a wonder that they are not found in all gardens. Even yet myriads of people know little of the existence of such beautiful spring flowers.—D.

— HILTON, LUNDRUM.—Whilst revolving round the axis of duty in my own little world of work, I now and again fly off at a tangent across the public road to exchange compliments with my neighbour Mick R., who is situated "right forninst" me. And seldom does this occur but what we are detected by "the mistress," who charges down upon us twain, not to send the pair about their business, but to add to the pleasures of the chat about these old-fashioned flowers in this old-fashioned garden. Perched up on a rocky bank, catching every sunbeam, and holding it, some things flourish here which in more pretentious places appear to exist only on sufferance. Two perfect *Araucarias* and other specimens of *Conferæ* tell their own tale of attention to nourishment by top-dressing, for that granite rock, however good it may be as a foundation for a house, is not the best medium for roots. In a damper quarter of the garden is a grand mass of *Polypodium cambricum* on a pebble-strewn mound, and near this I lately saw a clump of *Chionodoxa Lucilæ* in perfection, quite throwing in the shade *Scilla siberica* edging a small bed. Fine clumps of *Cyclamen europæum* were beautiful in their glossy foliage, and hundreds of the dear old friends of long ago are cherished, thought for, and talked about. As kindred tastes draw man to man, so do, I think, fellow sufferings. My friend, Mick R., suffers chronically from the "Mum fever," but he has the sympathy of his worthy mistress, Mrs. Wall, with whom I am privileged in having an occasional chat on the subject dear to the heart of lovers of, not new-fashioned hardy flowers, but those of the long ago.—E. K., *Dublin*.

— GARDENING APPOINTMENTS.—Mr. Hutt, late gardener to Lord Ormathwaite at Eywood, Titley, Herefordshire, has been appointed to the charge of the gardens at Lullingstone Castle, Dartford, Sir W. Hart-Dyke's. During his somewhat brief stay at Eywood he won general esteem, and leaves with the heartiest good wishes for his future welfare. Mr. R. Weller, who for the past ten years has ably filled the position of gardener and steward to Sir R. Wyatt at Garth-Angharad, Dolgelly, has been appointed gardener to the Mayor and Corporation of Aberystwyth. Mr. Richard Calvert, for the last two years fruit foreman at Welbeck Gardens, has been appointed head gardener to His Grace the Duke of Bedford, Woburn Abbey.

— THE BLUE MARGUERITE.—Whilst at the Swanley Nurseries of Messrs. H. Cannell & Sons a few weeks since I noticed a number of plants of *Agathæa cœlestis*, commonly known as the Blue Marguerite. The plants were covered with pretty blue Daisy-like flowers, and were most effective. This *Agathæa* is an old-fashioned plant, but it is by no means generally grown, which is a matter for regret, inasmuch as under good management it yields a profusion of blossoms nearly all the year. When required for winter and spring flowering cuttings should be inserted in sandy soil during March. Grow them under glass until June, when, after repotting, stand outdoors, letting them remain there till October, after which place in a warm greenhouse.—C. P.

— HYACINTH SHOW AT HAARLEM.—Messrs. E. H. Krelage and Son inform us that last autumn two show beds in their nursery grounds at the Zylweg (Overveen), near Haarlem, Holland, were planted with Hyacinths. Each bed contains over 600 bulbs of the choicest and newest varieties. Next month these beds will form a brilliant display, and will doubtless attract English visitors on a trip to Holland. A spacious tent is put over the beds during the flowering period of the bulbs. Similar shows were held in the Bloemhof Nurseries at Haarlem from 1880 to 1884, and again in 1889 and 1892. In consequence of the favourable season of 1893 Hyacinths are flowering well this season, and the show promises to be of a superior character.

— PRESTON AND FULWOOD HORTICULTURAL SOCIETY.—The sixteenth annual spring flower Show in connection with the Preston and Fulwood Horticultural Society was opened on Wednesday in last week at the Public Hall, Preston. Never since the formation of the Society has fine bloom and colour been more pronounced. Almost without exception the exhibits were of splendid growth. Amongst the special exhibits that were particularly noticeable was the superb collection (not for competition) sent in by Messrs. R. P. Ker & Son of Aigburth Nurseries. It included *Azaleas*, *Lilacs*, and *Amaryllises*. The display of Hyacinths also was larger than that of some years. The *Azaleas* were scarcely less noticeable. *Roses*, *Narcissus*, *Tulips*, and *Cinerarias* were not so numerous, but they were none the less remarkable for beauty of development or richness of colour.

— PRESENTATION TO MR. F. HARRISON.—An interesting presentation was made to Mr. F. Harrison by the workmen employed in the Knowsley Hall Gardens on his retiring from the position of head gardener. The presentation consisted of a handsome marble timepiece, which bore the following inscription on a silver plate:—"Presented to Mr. F. Harrison by the gardeners on the Knowsley estate under his charge on his retirement, March, 1894." Mr. Jno. Norris, in making the presentation, expressed sincere regret at the separation about to take place after Mr. Harrison's term at Knowsley of twenty-one years. Mr. Harrison, in reply, said it was the last thought in his mind to expect their handsome present, and hoped the kindly feelings existing between them would continue in the future. Mr. Harrison retires on a pension, and has purchased a residence in the neighbouring village of Huyton, where he intends to reside.—R. P. R.

— VERY EARLY SPRING FLOWERS.—There are a few hardy plants other than bulbs that give us flowers naturally to any appreciable extent during March. When I say naturally, I mean that bloom outdoors without protection. This is a section of hardy plants, the which needs great encouragement. We often see *Saxifragas*, *Cyclamens*, and similar things blooming freely enough under glass, but were they growing under ordinary conditions outdoors they would not be so early in flower. Without doubt of the very earliest blooming hardy plants are the then almost deciduous *Pulmonarias*, of which perhaps the finest and most effective is *grandiflora*. Then there is in a very restricted area in Middlesex a white *Arabis* that is in profuse bloom by the middle of March, and is fully three weeks earlier than is the ordinary variety. Some of the *Aubrietias*, when the plants are unharmed by frost, will bloom very early. Still, these things are very few, even when the diverse forms of *Hellebores* are included.—D.

— **SOAKING HARD SEEDS.**—There are many kinds of seeds that, owing to their hard nature, take a long time to germinate, and not unfrequently they fail to do so at all unless previously manipulated. This applies with special force to Cannas, *Acacia lophantha*, and others of a similar character. The first named will sometimes, if sown as received from the seedsman, remain in the soil for many months without germinating, and when plants are required in the course of that period this is, to say the least, somewhat annoying. Fortunately, however, it

Grevillea robusta, and others that are very hard, may advantageously be so treated.—**SUBURBAN.**

STREPTOCARPUS WENDLANDI.

At the meeting of the Royal Horticultural Society held at the Drill Hall, James Street, Westminster, on the 13th inst., Messrs. Sutton and Sons, Reading, exhibited a group of *Streptocarpus Wendlandi*, which



FIG. 37.—*STREPTOCARPUS WENDLANDI*.

can be obviated by soaking the seeds in warm water for some hours previous to sowing. The plan I generally adopt with considerable success is to obtain a small wide-necked bottle, and place the seeds in this, filling with lukewarm water. Then the bottle is stood on an oven, boiler, or hot-water pipes in the greenhouse, and in a few hours the seeds commence to swell considerably. They are then taken out and sown in warm soil in the ordinary manner, and invariably start growing at once. Seeds of *Erythrina crista-galli*,

attracted more than ordinary attention. This is a striking plant, each one producing a single leaf measuring from 18 to 24 inches in diameter, and of great substance. From the base of the leaf rises a scape 2 feet high, which produces porcelain blue and white flowers. The plants exhibited, and from one of which the accompanying illustration (fig. 37) has been prepared, were raised, it is said, from seeds sown in January, 1893, and in that short space of time have developed such remarkable growth.



JAPANESE CHRYSANTHEMUM ELECTION—WALES.

"SASSENACH" (page 206) appears to have missed the fact that Wales was represented in the late collection in no less a person than Mr. Lambert, gardener to Earl of Powis, Powis Castle, Welshpool, who was two or three years since a noted grower. I regret very much that Ireland was not represented by our friend "E. K.," who, in my opinion, was most able to take part in the election.—E. MOLYNEUX.

JAPANESE CHRYSANTHEMUM ELECTION AND NATIONAL TRIAL.

VARIOUS readers of the Journal seem to have misunderstood my note (page 150) respecting this and a trial by the National Chrysanthemum Society. I had no idea that the trial should supersede the audit, rather I would say let us annually have an audit of the best twelve and twenty-four Japanese varieties. In spite of all that has been said I still contend that no elector is justified in including in the first twelve three or four varieties which he has not grown. The audit gives Madame E. Rey and Primrose League three votes each, and Elmer D. Smith only two votes, and yet I think it would be safe to predict these varieties will attain a high position and replace others which are now included in the first twenty-four. I believe the conditions of election were—that each person was to include those varieties which he could recommend to a beginner, and bearing this in mind I fail to understand how he would be justified in recommending varieties of the growth of which he had no knowledge.—OMEGA.

CHRYSANTHEMUM MRS. A. HARDY.

I THANK Mr. Molyneux for his kind reply (page 188). No doubt till the grower gets to master its culture Mrs. A. Hardy must be classed as a variety with a weak constitution. Regarding suitability of soil, I should say water is a more important factor in its well-doing. The plants were potted with the same compost as the others, and grew quite robust, decidedly stronger than some kinds. From the time the buds were taken (August 11th to 28th) they made rapid growth, were more satisfactory than some varieties that are recognised as being easy to grow. I attribute our success to careful watering, evidently it is most impatient of too much water.

But the most serious objection is its being described as "dingy." Amongst the best whites it more than holds its own. Avalanche, Mdle. L. Leroy, do not approach it for purity of whiteness; and only the very best whites, as Empress of India and Elaine, can equal it. Neither do I attach much importance to its hirsute appendages, but to its broad petals and noble build; and last, but not least, to its snowy whiteness. In this I do not give my judgment, but the unbiassed opinion of visitors that have come to see the "Mums;" people who do not know the kinds by names, but who, nevertheless, are competent in the decision of colour only, and amongst the many persons who saw them everyone selected Mrs. A. Hardy as the best white, staged side by side with the best-known whites.

I should also add we have experienced no difficulty in procuring cuttings, but in weakly plants no doubt it is a difficulty; neither does it seem more subject to mildew than the average varieties.—JOHN RAINBOW

NEW CONTINENTAL CHRYSANTHEMUMS FOR 1894.

THERE is always a peculiar interest in perusing the lists of the foreign raisers early in the year. To read the descriptions of the new flowers and then to compare these descriptions with the flowers themselves some nine or ten months afterwards is frequently an object lesson in colour and form, and sometimes one which is of considerable service to those who endeavour to be literally accurate in similar work. Most of the early lists are now to hand, but they cannot be regarded as complete until the end of next month, when the last of the Chrysanthemum raisers' catalogues are sent out. It is worthy, however, of mention that the advance lists from France announce the distribution of 272 new varieties as yet. Simon Delaux, Boucharlat, Lacroix, Calvat, and several others are all well to the front, as usual, and of this number there are fifty early flowering varieties, twenty-eight hairy sorts, and the remainder presumably belong to the ordinary November blooming type.

Those of us who make a point of attending the floral meetings and trade displays next season may look upon ourselves as fortunate if we succeed in obtaining a glimpse of fifty of these newly announced Chrysanthemums at the most, and probably ten or a dozen more in the course of the following season of 1895. Competition among novelties is now so keen that it is doubtful whether any importer can afford to test the new varieties as a whole more than one season, and for those which do not show some signs of excellence in the first year of their cultivation there is only one remedy, and that is to cast them aside directly the new year's stock is laid in. Occasionally a good variety gets overlooked in this way, and a few years afterwards it comes to the front by having been placed in the hands of some good grower, who turns it out in good form, but this is probably rather the exception than the rule. To become popular a novelty must make its merits known the first season of its introduction.

On the whole the names of the continental novelties for the present year are fairly distinct, and the leaning towards lengthy ones seems to have been rather suppressed. It is a pity, however, to find that we are to have another Phœbus, Marie Crépey, Louis Vozaz, La Folie, General Dodds, Figaro, Etoile Polaire, Dame Blanche, Distinction, Ceres, Coquetterie, Toison d'Or, La Fraicheur, Mignon, Caprice, Attraction, Argentine, all of which are borne or have been borne by older flowers. It is just this want of a little precaution on the part of our Gallic friends that causes so much confusion both here and in America.

The Americans are most careful in this respect, for it is a rule of their National Chrysanthemum Society that no new seedling can be registered by them that bears a name similar to one already in use. If a grower in that country chooses to act independently of the Society the name is not officially recognised. In a matter of this kind we have good reason to be thankful for the efforts of the American N.C.S., especially as their standard catalogue is the one issued by our own National Society here in London. Unfortunately there is no Chrysanthemum society in France, nor does there appear to be any kind of unofficial organisation among the growers there. Until this is done we may expect to find the nomenclature of French Chrysanthemums go from bad to worse. Private correspondence and public remonstrance in the press appear alike to be of no avail, and indeed it seems to be a hopeless task to attempt it any further. In spite of that, however, I have for some time past usually indicated at this season of the year the most glaring instances to be observed in the novelties for the year.

I am hopeful of seeing some degree of improvement in the new French seedlings in future. Most of the raisers on the other side of the Channel are keenly alive to the importance of keeping pace with the demand for large show flowers. Numerous inquiries are now raised every year for the names of the best English and American seedlings, and they are annually added to the French collections. With their climate and the intelligent cross-fertilising of such material, there should surely be no reason for the decline of seedling raising in France.—C. H. P.

THE SHAMROCK.

WITH these few notes from Ireland is posted a small box, enclosing some sprays of a humble plant gathered from an Irish sod, which may be *Trifolium minus* or may not, a doubt which doubtless the Editor can remove; yet with us during the festival of St. Patrick the botanical name is of but secondary importance, for it is "the dear little Shamrock of Ireland." Would that I could convey with it that subtle charm, that those to whom it is known only by repute might for a brief space be under its magic spell, and by such influence better understand how much this simple plant has entwined itself in the affections of a people. Modest as is the chosen emblem of the Emerald Isle in comparison with the Rose of England, the Lilies of France, or the Chrysanthemum of far Japan, it appears for the time being to outrival them all, though later on in the season it is but a Clover, or whatever the Editor decides. I question whether even those who admire it most watch its development to the flowering stage. In its early growth it attains its exalted position, in maturer age it takes its place with the humble and meek of the herbs of the field. It is no party emblem, all shades of opinion meet on the one ground to gather the Shamrock; nor class emblem, for from peer to peasant is honour paid to the lowly spray immortalised by the patron Saint of Ireland; and those in the country, not of it, pay that respect in wearing it which others by birth consider a duty.

The practical ideas of the age we live in, with their tendency to shake belief in legends and traditions which this country is peculiarly rich in, appear to have made but small progress. True, all in these days have not the gifted vision to see fairies, leprechauns, or banshees, that is rather their misfortune than their fault; in the Shamrock there is something more tangible to grasp, seen by all, and all believing, only on the question of variety do they agree to differ.

Amongst the lesser Trefoils claiming the distinction of being the symbol used by St. Patrick are *T. minus*, *T. perenne*, *T. repens*, and also *Oxalis acetosella*. I have in different localities endeavoured to arrive at the truth, for "Magna est Veritas." In the last attempt I am probably as near to it as I ever shall be, or perhaps it is possible to be. In the first attempt, made in a purely country district, where the old beliefs are strong, the results were not satisfactory, perhaps attributable to my incautiousness as an interviewer. Old H., now taking his long rest under the Shamrocks in an ancient Irish graveyard, had for nigh on fifty years been employed in the one garden. To him I appealed thus:—Did you get me the true Shamrock, H.? "Bedad, they're good ones, mister." Well, but is this the right thing? "Why wouldn't it be?" Is it Clover? "Begorra it's not." Does it flower? "It may and it mayn't." Does it fruit? Here some vision of Apples or Pears must have crossed the poor old man's mind, for he indignantly replied by asking, "Was it humbugging him I was?" So ended my first search after truth.

Lately I procured some specimens, and from past experience interviewed more cautiously. The most likely piece I first submit to Andy K. Is this Shamrock, Andy? "Bedad it is, I think." The

next is Phely H., who says, "It's a very good sort." The next says, "It's hard to get the real thing;" but I am referred to B. S., whose authority all agree is unquestionable, and he it is who procured for me the specimens sent to Fleet Street. About a month since we saw in the Dublin papers particulars of an order cabled by the Editor of the "New York Herald" for 18,000 pieces—*boutonnieres*, to be shipped to New York on March 1st, and ere this I do hope that 18,000 in the distant land have received this bit of the "old country." It is easier to imagine than describe the associations with that bit of green which will for the time take them back to the hills and valleys of "Dear Ireland." "When a man cannot get to his own country it is a good thing to be in sight of it," and surely no better medium could be found to bring in view those scenes of home and fatherland endeared by absence.

In the country districts the day—17th March—is strictly kept as a holiday, and the invariable etiquette of the "Wearing of the Green" is to fix it in the band of the hat. In Dublin and the suburbs workmen are content to pursue their usual avocations, while the *haut ton* of young Ireland in the city relegate the emblem to the buttonhole; but in both town and country the institution known as "Patrick's pot" gets due consideration. This pot is in reality a glass of—well, fill it up at discretion, it generally consists of the wine of the country, which repeated at intervals throughout the day results in what is known as the drowning of the Shamrock, though the Trefoil plays a passive part. Lest the inference might be drawn from the above remarks that our festival results in a kind of glorified Dennybrook Fair, I hasten to say those days of revelry are now ancient history; as a rule the day is kept wisely and well, and due honour is paid to the Missionary Bishop who fifteen centuries ago gave to Ireland her emblem of the Shamrock.—E. K., *Dublin*.

[The specimens received, and very good they are, are of *Trifolium minus*, which we regard as the true and original Shamrock, and the influence it exerts on those who are "in the country, but not of it," is pleasingly apparent in "E. K.'s" communication.]

POTATO CROPS AND CHEMICAL MANURES.

EXPERIMENTS were carried out here last summer with the view of testing the comparative value of manures for the production of Potatoes. Eleven distinct compositions were carefully measured, several of which did not show good results. The best were chemical manure—kainit, superphosphate, and nitrate of soda, 3 lbs. of each per perch, or 12 cwt. per acre. Half the nitrate of soda was applied when planting, the remainder at moulding time in May or June. The produce from this amounted to 156 lbs. per perch—over 11 tons per acre. The cost of this manure would be £3 per ton here. The land without manure produced at the rate of 6 tons 3 cwt. per acre. The gain from the manure was at the rate of 5 tons per acre; this was the average of several perches. The same composition applied all at once when planted, produced 142 lbs. per perch.

Fold manure, 4 cwt. per perch, equal to 32 tons per acre, yielded 120 lbs. per perch; cost at 5s. per ton, £8 per acre. Half-fold manure, with 4½ lbs. of the above mentioned chemical manure, produced 138 lbs. per perch. This experiment showed chemical manure to be the most profitable, especially, I should say, where fold manure had been used for previous crops. There is nothing extraordinary in this yield, although it was about 4 tons per acre more than from another experimental field. This difference appeared to be entirely in the nature of the soil not previously manured. We have from 10 to 11 tons per acre grown in fields in this district annually, where the crop is properly catered for. The experiments mentioned were conducted on land that was badly ploughed, and yet the results were fairly good for the open field.

Potatoes in the Garden.—The soil here is light, and stable manure is dug in during the winter. We usually dig two spades deep, so the soil is very open, consequently warm for the climate. As we use a large amount of stable manure we apply lime to decompose it, and have added 6 lbs. or so of chemical manure per perch. With this practice we have produced quite extraordinary crops for many years in succession, and there is no reason why others should not be able to do the same. What we have done has been just in the ordinary course of gardening; we have carefully weighed the crops because so fine. We have had at the rate of 14 to over 24 tons per acre. The varieties we have found so productive were obtained from Messrs. Sutton & Sons—namely, Supreme, Windsor Castle, Sutton's Seedling and Perfection, with, as late sorts, Triumph, Masterpiece, Satisfaction, and Abundance. In many places second early Potatoes are useful. These may often be lifted before the disease becomes prevalent, and the crops being out of the ground early a good second crop of green vegetables is obtainable.—GEORGE HARRIS, *The Castle Gardens, Alnwick*.



ROSE SHOW FIXTURES IN 1894.

- June 27th (Wednesday).—Windsor (N.R.S.).
- „ 28th (Thursday).—Canterbury, Eltham, and Sutton.
- „ 30th (Saturday).—Sittingbourne.
- July 3rd (Tuesday) Farningham and Bagshot.
- „ 4th (Wednesday).—Croydon and Reigate.
- „ 5th (Thursday).—Hereford and Norwich.
- „ 7th (Saturday).—Crystal Palace (N.R.S.).
- „ 10th (Tuesday).—Gloucester and Wolverhampton.*
- „ 11th (Wednesday).—Hitchin.
- „ 12th (Thursday).—Bath, Harleston, Woodbridge, and Worksop.
- „ 17th (Tuesday).—Helensburgh.
- „ 19th (Thursday).—Halifax (N.R.S.), Halesworth, and Trentham.
- „ 21st (Saturday).—Manchester.
- „ 26th (Thursday).—Southwell.

* A Show lasting three days.

Any date of Rose shows, or of other horticultural exhibitions where Roses form a leading feature, not named above, I shall be glad to receive as soon as fixed, for insertion in future lists.—EDWARD MAWLEY, *Rosebank, Berkhamsted, Herts*.

REIGATE ROSE ASSOCIATION AND CLASHING OF SHOWS.

SEEING the letters in the *Journal of Horticulture* respecting the above subject I think it only a duty if I explain matters. First—It is the Cottage Garden Society that has picked up the Reigate Rose Association, and the Show of the former has always been held on Wednesday, as it is the early closing day with all shopkeepers; then we had to fix the date at a time when the Roses were likely to be at their best in the Reigate district. Our date was fixed on December 2nd, 1893, and although we were aware that the Croydon Show was generally on that day, the matter was thoroughly and honestly discussed, and considering that we must either clash somewhere or alter the day (Wednesday) we thought we were in duty bound to study the home growers and supporters. I can assure your readers that we acted in no spirit of opposition in any way, and we ask those who have Roses to try and support both shows.—W. WELLS, *Hon. Sec.*

GUSTAVE FIGANEAU.

I HAVE been much surprised that there has apparently been no great demand for Gustave Figaneau, especially after its phenomenal success of gaining the N.R.S. medal so many times during 1891–92. When a Rose is sufficiently good to carry off this honour against the whole of the older introductions, one would expect a large demand, but I am assured it is not so. Much has been made at different times of its moderate growth, but as it is so free blooming, surely this is no bad characteristics. Some plants which were established on the Manetti last spring, and not turned into the open on account of the excessive drought, are now proving what a grand variety this is under glass. Its freedom in pots is equal to La France and Général Jacqueminot. I had intended planting them out this winter, but press of work caused delay until we considered them too forward. They are in large 48's, and although only mulched with loam and manure are now carrying three to five blooms of fair substance, brilliant colour, and standing boldly above the foliage—a most valuable property with Roses in pots.—PRACTICE.

NATIONAL ROSE SOCIETY'S PROVINCIAL SHOWS.

AS I am probably the amateur in the Isle of Wight to whose letter "D., Deal," (page 186) refers in your issue of March 8th, I beg to state that I assumed no fanciful line at all, but the very simple division of north or south of London. This was what was intended, I know, by several at least of those who first urged a southern show. It was assumed or stated in various letters to you and to a contemporary that the southern show was to precede, the northern to follow, the Crystal Palace Show. Why should this be so on any other principle? If we come to ridiculous questions about the Trent, the Wash, the Humber, cricketing counties, and similar matters, there is no reason why both provincial shows should not be in July. London is the true centre of England when judged by the only true principle for our purpose—the means of communication; and Windsor, as I stated, is not a southern town—that is, between any southern growers and London—but a suburban town, on precisely the same footing as the Crystal Palace.

There are four towns which might justly claim an early consideration from the National Rose Society's Committee for the southern show. They are Portsmouth, Winchester, Southampton and Ryde. I have been unable to get to any committee meetings for some time, or I should have protested against the selection of Gloucester so soon after Hereford. Of these four, Portsmouth is the most naturally suitable, but appears to be at present hopelessly apathetic. Southampton might, perhaps, like to step in where Portsmouth has failed. Winchester has a good Rose society existing, and is fairly accessible. Ryde would do more good than any other of the four, by breaking entirely new

ground, and that, too, when Rose cultivation has just made a promising start in the Island. It is probably the only town in the Island that would do, because of its easy access from Portsmouth without encountering our awful railways. In any case let the "southern" show be in an honestly southern town.—G. E. JEANS.

HYBRID PERPETUALS IN POTS.

THAT this section of Roses is not so much grown in pots as was formerly the case will, I think, be acknowledged by all. I see no great reason for this, except the more perpetual blooming properties found in the Teas and Noisettes, more especially among the former. But if we get freedom in flowering, and a much wider extension of usefulness, we are minus the glowing colours to be found among the Hybrid Perpetuals. A greater depth of colour is only a question of time in the Tea-scented division, and in spite of the general feeling among rosarians that deeper shades spoil the chaste effect of the soft colours at present prevailing in a stand of Tea Roses, there can be no doubt the advent of deep reds with the more perpetual properties of Teas will be welcome. Until that time arrives, however, we are dependent upon the Hybrid Perpetual section for the dark Roses under glass as well as in the open border.

Neither W. F. Bennett, Reine Marie Henriette, nor Alphonse Karr give us the intensity found in Général Jacqueminot, Fisher Holmes, and A. K. Williams; not to mention the deep maroon shades of Charles Lefebvre, Prince Camille de Rohan, and Abel Carrière. More than once my friends have expressed no little surprise when I have recommended the last named Rose for potwork. "Too shy a bloomer" is their objection to it; but I have had shoots carrying from ten to twenty well formed flowers, which, if not large, were all that could be desired in colour.

It is of the utmost importance that strong growers should mature a good proportion of stout wood made late in the season. When plants are in the open ground we encourage this, and secure a number of flowers from bending and pegging down these vigorous growths. In pots, however, we often overlook it; nor do the plants have sufficient opportunity to make the desired growth. The plants are usually removed to the open as soon as possible after the flowers have been gathered. Although we need the house room for some other plants, there is no reason why the Roses should be neglected. By the time they have finished their first and main crop of bloom, they will be carrying healthy growths and breaking strongly from the base. When this receives a severe check we have practically spoilt our best chance of a good display during the ensuing spring. I make a practice of standing them in another house, or in a deep pit. Here they are easily kept growing by a little attention to syringing, watering, and the protection of lights according to weather.

We should not look for good autumnal growths from plants in the open air if they were to experience a sudden drop in the temperature of fully 20°, together with extreme drought at a time when growth was very active after the early summer bloom; and yet this is exactly what we are too often subjecting our pot Roses to. They need quite as much, if not more attention at this stage. Without properly matured wood it is impossible to have a good crop of bloom, while quality is quite hopeless.

Another grave error is too hard forcing at first. We need steady advances in temperature even more with this section than in the case of Teas and Noisettes, or a large proportion of flowerless growth may result. Nor is it well to aim at too great a number of varieties. I always avoid the light coloured forms. A few really good dark H.P.'s for forcing are Général Jacqueminot, Eclair, Fisher Holmes, A. K. Williams, Countess of Oxford, Abel Carrière, Prince Camille de Rohan, Madame Victor Verdier, and Souvenir de Charles Montault.

Large pots are not necessary if we use sound rich loam as the staple, and pot firmly; but I would repot every other season, and also introduce a few young plants from the nursery rows annually. These could take the place of the least useful veterans as they fall out of the ranks. When is the best time to pot seems rather a vexed question with many. Much depends upon why you are repotting. If because you wish for a larger plant it may well be done immediately the blooms are secured, and thus afford the roots new soil for the formation of more wood; but if you can secure sufficient wood for your purpose without repotting at this time I would do so by all means. Help them with liquid manures. A friend of mine has been very successful with plants in this condition by placing sheep droppings on the surface soil. At each watering a certain amount of nourishment was washed down.

If the repotting is being done because the soil is considered exhausted, I would choose for the operation a few weeks after the plants have become ripened, then turn them carefully out of the pots, and remove as much of the soil as possible without unduly disturbing the roots. I am aware that this plan is not in favour with many, they having an idea that any root disturbance, from whatever cause, is prejudicial to a good display of bloom. But I do not advocate any serious disturbance of the roots; what I advise is simply the addition of fresh soil, in which the future roots can revel at pleasure. How the idea of extended root growth being detrimental to a good supply of bloom came to be so firmly fixed in the minds of many gardeners I am at a loss to account. The same grower who will uphold this opinion has no hesitation in letting his plants of Maréchal Niel and others extend their roots at will; and when we note how quickly a plant makes new roots if fresh soil be added at any time after root growth is completed it would seem that this is the best period for repotting.

I encourage autumn planting because a small quantity of new roots

get established before the rigours of the winter are upon us. If there is any useful purpose served by this at a time when the plants are facing a falling temperature of long duration, how much more is such the case when plants are placed under cover and gradually brought into a gentle heat at the decline of the year. In the latter case they reap enormous benefit from these early roots. Such, at any rate, is the belief and the experience of—PRACTICE.

ROYAL HORTICULTURAL SOCIETY.

MARCH 13TH.

SCIENTIFIC COMMITTEE.—Present: R. MacLachlan, Esq., F.R.S. in the chair. Messrs. Blandford, Wilson, Jenner Weir, Michael, Drs Hugo Mueller, Scott, and Masters.

American Blight.—Mr. Blandford, alluding to the matter discussed at the previous meeting, expressed the opinion that the woolly aphis (*Schizoneura*) does go down into the soil, but the Coccids do not.

Beetle Attacking Orchids.—Mr. Blandford stated that he had received specimens of the pseudo-bulb of a *Dendrobium* perforated by a blunt-headed beetle, *Xyleborus morigerus* (Blandford), and described by him in "Insect Life."

This led to a discussion as to the increasing necessity of putting imported Orchids into quarantine before introducing them into the Orchid houses, lest those structures should be overrun with exotic insects. Bisulphide of carbon was recommended as useful for this purpose. Its highly inflammable nature must, however, be borne in mind.

Mr. Michael, speaking of the presence of Acari in dust-sweepings, alluded to the immunity which these creatures possess against poisonous substances, such as bisulphide of carbon. Desiccation is the only method of killing these creatures, but this cannot always be carried out to a sufficient extent without injuring the plant.

"Blue" Primroses, &c.—Mr. G. F. Wilson showed various seedling Primroses of a dark slaty blue colour, and some plum-coloured with a yellow eye. He also showed flowers of a hybrid *Narcissus*, presumably between *N. cyclamineus* and *N. Johnstonei*.

Exfoliated Bark in Pears.—Mr. Jenner Weir showed shield-shaped masses of bark, 2 or 3 inches long, 1 or 2 inches broad, which became detached from the stem of a *Beurré Clairgeau*, the wound so formed subsequently healing up by "occlusion" in the ordinary way.

Camellias, Azaleas, &c., Diseased.—From Christchurch came branches of *Camellias*, *Rhododendrons*, and *Azaleas* gradually shrivelling and dying, more than twenty large plants having died during the last two years without apparent cause. The *Camellias* were badly infested with scale, but nothing could be seen to account for the condition of the other plants. It was suggested that a salt blast might have affected the plants.

Ivies.—Dr. Masters brought shoots of numerous varieties of Ivy growing on a wall facing the west, to show the very different way in which they, though all belonging to one species, suffered from the effects of frost. In some the leaves were quite killed, in others wholly uninjured, with every intermediate degree of injury. Mr. Jenner Weir pointed out that the variety *himalaica* was notoriously more tender than many others. Dr. Masters thought it most probable that the whole of the varieties now grown in gardens originated from home-grown plants of *Hedera helix*. He had himself seen two or three forms growing on the same plant. *Hedera helix* is noted by Mr. C. B. Clarke, in Hooker's "Flora of British India," ii., page 739 (1879), as growing throughout the Himalayas at altitudes of from 6000 to 10,000 feet, and in the Khasya mountains at elevations of from 4000 to 6000 feet.

"Cedar" of Goa.—Dr. Masters contributed the substance of a paper on the history of this tree, which will be inserted in the Journal of the Society. The tree in question is a Cypress, the only known large examples of which exist at Bussaco in Portugal, where they have been known since the beginning or middle of the seventeenth century. They are supposed to have been introduced from Goa, but no such Cypress grows wild in that region. *C. lusitanica*, alias *C. glauca*, is now commonly planted in India and in South Europe. In some parts of the British Isles it thrives, but is in most places tender. The tree mentioned in the Conifer Conference Report as having attained a height of 39 feet at Ross Dhu, in Dumbartonshire, was erroneously called *lusitanica*, as shown by specimens now received from Ross Dhu and exhibited to the Committee, and which were clearly referable to *C. Lawsoniana*.

Root Galls.—The Chairman alluded to the existence of *Biorhiza* (*Cynips*) aptera on the roots of the Plum, Oak, Deodar, Beech, and Birch, and stated that it had now been proved repeatedly that the insect producing the root gall is exclusively female, and is always destitute of wings. The male form of the same species produces the spongy galls on the leaves of the Oak, known as Oak Apples. The only true *Cynips* is *Cynips Kollari*, that which makes the round galls on the Oak. This insect has been introduced within the last thirty or forty years. Other galls, supposed to be the work of different genera of insects, are now known to be the work of two stages or generations of one and the same species, *Teras* or *Biorhiza terminalis*.

EXHIBITING CUT FLOWERS.

TWELVE VARIETIES, DISSIMILAR.

I KNOW, Mr. Editor, that you rather like to have a nut to crack now and then, so send you one, and pray illuminate our darkness, for we are in a fog. The committee of a society which I need not name, and of

which I am one of the lesser lights, had the following class inserted in the schedule, "A collection of twelve varieties of cut flowers, dissimilar."

There were four competitors, three of them conforming literally to the generally understood wording of the schedule by staging only one variety in each bunch, whether an Orchid or any other species or variety. The stand to which the first prize was awarded contained in one bunch two varieties of Roses, another bunch two varieties of Cyclamen persicum, another three or four at least varieties of Carnations. This led to a protest from the other three exhibitors, who took up the ground that by twelve distinct (or dissimilar) varieties, it was always understood that only flowers of one species or variety should be in each bunch.

At an informal meeting of some of the committee to consider the protest, different opinions were expressed as to the literal meaning of the words, and chaos reigned. The only immediate solution of the difficulty which materially brightened up the saddened countenances of the bewildered ones was to adopt the concluding words of one of the rules, that "The decision of the judges to be final."

You have known me, Mr. Editor, for a long number of years, and that I have had a little to do with judging, and with me it has always been a practice to accept the words "dissimilar varieties" as meaning blooms only of one species or variety; and I am beginning to doubt whether I have been blundering all along after hearing some of the arguments of some of my colleagues, who believe that even two or more species of Phalaenopsis could be shown in one bunch as a "dissimilar" variety. I argued, No; but I was over-ruled.

I am of opinion that the wording of this particular class in our schedule was fairly intelligible as schedules go; but it is another instance of the necessity of having schedules very clear and definite in the wording to avoid *contresens* of this character. I look to you as our monitor and guide to give a solution to this enigma. Are we right or wrong in the wording, and what is the real definition of dissimilar varieties according to words used in the schedule as I have already given?—ENQUIRER.

[A very easy "nut to crack" and "enigma to solve." There is hardly a shell to the nut and the "enigma" is scarcely discernible. Twelve dissimilar varieties means twelve varieties and no more. This definition applies to all exhibits. If the stipulation refers to twelve dishes of fruit, or twelve dishes of vegetables, any person who stages thirteen dishes is disqualified. On the same intelligible, and we must add reasonable, principle, if "twelve varieties of cut flowers, dissimilar," are asked for, exhibitors of thirteen or more varieties in the class are obviously not within, but outside the stipulations, and, therefore, clearly open to disqualification. The protestors in the case in question were perfectly justified in their action. Committees who shelter themselves under the rule alluded to should have the courage of their convictions, and complete the wording as follows: "The decision of the Judges to be final, even if they are wrong." Will they do so?]

IRIS SINDJARENSIS.

THIS charming early flowering Iris, where grown in pots, is now at its best, and some specimens of it were noticeable in the collection of hardy flowers shown by Messrs. Barr & Sons at the last meeting of the Royal Horticultural Society. The flowers are of moderate size, and though less showy than the favourite early Iris reticulata, the delicate lavender blue tint is very pleasing. A most distinct character is afforded by the leaves, which are broad, closely set on the stem, recurving, and of a glaucous tint. The moderate size of the plant adapts it for culture in pots, and out of doors it would need a somewhat warm and sheltered situation to ensure its success. Fig 38 represents it.

SAXIFRAGA LUTEO-PURPUREA AND SAXIFRAGA MALYI.

EVERYONE will admit that it is a matter for regret when a plant becomes common in gardens by its wrong name, owing to defective labelling at Kew, but it is only those who know something of the inner life of Kew who are aware of the laborious pains that are taken there, and of the difficulties which botanists in the Royal Gardens find in describing all the living plants correctly. It must be remembered that many of the living hardy plants are sent there by nurserymen and amateurs without correct information being given of their source.

In many cases these plants are of garden origin, and belong to the typical form of no species, and all that can be done in such cases is to retain the name under which the plant is sent, unless it is very obvious that it is wrong. I may illustrate this by the adventures of a plant about which a good deal has been written in gardening papers this winter, as it has been in flower in the alpine house at Kew in plenty since early in January. It has been labelled for the last three years Saxifraga luteo-purpurea, and has abundance of pale yellow flowers. This plant was exhibited by Mr. George Paul from Broxbourne Nursery at the March meeting of the R.H.S. in 1888 under the name of Saxifraga Frederici Augusti. It received a certificate by that name, but when sent by Mr. Paul to Kew the name was changed to S. luteo-purpurea (Lapeyrouse). This spring it was considered by the botanists there to

be S. luteo-viridis (Schott & Kotschy), and a few days ago I was told that the name had again been changed to S. scardica (Grisebach).

As for Saxifraga Malyi, this too was exhibited by Mr. George Paul before the R.H.S. in March, 1889, and had a certificate awarded to it by that name. It seems, however, to differ from the other only in flowering a little later, and I believe when sent to Kew had the name S. luteo-purpurea assigned to it, and has since followed the fortunes of its earlier flowering sister. Now it is not unlikely that both these Saxifragas may turn out to be garden hybrids, perhaps between S. sancta, which they much resemble, and some kindred yellow flowered species.



FIG. 38.—IRIS SINDJARENSIS.

I know that in my own garden it is very difficult to get some species of Saxifraga at all true from seed, owing to the freedom with which they form spontaneous hybrids.—C. WOLLEY DOD, *Edge Hall, Malpas*.

CRYSTAL PALACE SPRING SHOW.

MARCH 17TH.

THE annual Show of spring-blooming plants, held on the above date, was one of the best that has been seen for many years. The exhibits were numerous and the quality exceptional, the prizes in several of the classes being keenly contested for. Hyacinths and Tulips were very fine, as also were Lily of the Valley and Cyclamens. Miscellaneous exhibits were numerous and much diversified. The change in the arrangement of the tabling was an excellent one, for instead of the long rows which, however good the exhibits, are liable to become monotonous, the tables, large enough for only three or four exhibits each, were placed here and there down the centre of the transept. It is a change which should be followed, for it undoubtedly much enhanced the good effect and beauty of the Show. The greatest credit is due to the managers of the Exhibition for the admirable manner in which the arrangements were carried out. We append a list of the prizewinners in the principal classes.

There were only two competitors in the class for thirty-six Hyacinths, both stands being of a high order of merit. The first prize was awarded to Mr. J. Douglas, gardener to Mrs. Whitbourn, Great Gearies, Ilford. The spikes were fine in shape and the colouration perfect. Amongst the best may be mentioned Sir H. Barkley, Electro, Garibaldi, Princess Amelia, King of the Blues, Lord Derby, Vuurbak, and La Grandesse. Messrs. H. Williams & Sons, Fortis Green, Finchley, were placed second. The exhibit was fine, but perhaps not quite so fresh as the one previously named. Von Schiller, Lord Derby, Princess Amelia, and Czar Peter were particularly prominent. For twelve Hyacinths, distinct, Mr. J. Schumacher, gardener to M. Jacoby, Esq., Lynwood, The Avenue, Gipsy Hill, was a good first with La Grandesse, Moreno, and Lady Clinton, in splendid form. Mr. J. Gibson, gardener to E. H. Watts, Esq., Devonhurst, Chiswick, was a close second; and Mr. Lambert, gardener to H. W. Segelcke, Esq., Herne Hill, third. There were five competitors in this class. In the class for thirty-six Tulips Mr. Douglas was first with Joost Van Vondel, Keizer's Kroon, Van der Neer, Ophir d'Or, and Vermilion Brilliant, exceptionally good. The second and third prizes were taken by Messrs. H. Williams & Co. and J. Howe, gardener to H. Tate, Esq., Park Hill, Streatham Common, in the order of their names. Mr. J. Gibson, who appeared to be the only competitor, was given the first position for twelve Tulips.

For twenty-four Narcissi (Polyanthus) Mr. J. Douglas repeated his former successes with a superb stand. The plants, amongst which were seen Gloriosa, Adonia, Jaune Supreme, Mont Cenis, and Grand Monarque, were perfectly grown and bloomed. Messrs. H. Williams and Sons were a good second. Messrs. J. Gibson and W. Kemp, Blandford Nursery, Teddington, took first and second positions respectively for twelve Polyanthus Narcissus, both exhibits being good. In the class for twenty-four Narcissi (Daffodil section) Mr. Howe was a good first. Empress, Horsfieldi, Princeps, Henry Irving, Irish King, and Telamonius plenus were amongst the best. Messrs. H. Williams and Sons were a close second with Henry Irving, Princeps, Van Sion, Horsfieldi, and others; Mr. J. Gibson being a fair third. Mr. T. S. Ware, Hale Farm Nurseries, Tottenham, was first for twelve Narcissi (Daffodil section); and Mr. Lane, gardener to E. H. Coles, Esq., Burntwood, Caterham, was second. The St. George's Nursery Company, Hanwell, was first for thirty-six Cyclamens with a magnificent stand; Mr. J. Mowbray, gardener to Major the Hon. H. C. Legge, Fulmer, Slough, being second with fine plants; and Mr. J. Odell, Gould's Green, Hillingdon, third. There were four competitors in this class, and the quality was fine throughout. Mr. Wyatt, gardener to J. Berry, Esq., Bradenhurst, Caterham Valley, was first for twelve Cyclamens; Mr. Lane being second; and Mr. Slogrove, gardener to Mrs. Crawford, Reigate, third. For twelve Amaryllises Messrs. Paul & Son, Old Nurseries, Cheshunt, were first; Mr. Douglas second, and Mr. Howe third.

There were only two competitors in the class for twelve Cinerarias the winner, Mr. Ford, gardener to Sir C. Pigott, Bart., Wexham Park, Slough, staging handsome specimens. Mr. J. Douglas was accorded the second place. For twenty-four Primulas Mr. J. Odell was an easy first with splendidly flowered plants, Mr. Ford the only other competitor being placed second. Mr. Jannock, Dersingham, the only contestant in the class for twelve pots of Lily of the Valley, was deservedly placed first with perfectly grown examples. The first and second prizes for eighteen pots of Mignonette grown in the market style were taken by Messrs. Kemp and H. Williams & Sons as named, each showing highly creditable plants. For nine trained Mignonette Mr. Leakey, gardener to J. M. Douglas, Esq., Kupaara, College Road, Upper Norwood, was first with splendid bush plants, and the second prize not being awarded, Mr. Ford was placed third. Mr. R. Wells, Longton Nursery, Wells Road, Sydenham, the only competitor for twenty-four greenhouse Azaleas, was awarded the premier position with well grown and trained specimens. Oswald Schriber, President Raphael de Smet, B. S. Williams, Madame Bafinger, Mdle. Marie Lefebvre, Apollon, and Deutche Perle were noticeable. In the class for a group of Cyclamens arranged for effect the St. George's Nursery Co. was a splendid first, Mr. Mowbray being second, and Mr. Odell third. The plants in each case were well grown and staged, except in the third prize exhibit which was too flat and formal.

For a group of flowering and foliage plants arranged for effect in a space not less than 100 square feet, Messrs. J. Laing & Sons, Forest Hill, were placed first. The taste displayed in the arrangement of this exhibit was superb, the colours blending perfectly. Amongst the plants used, Dendrobium Wardianum were particularly fine, as also were D. nobile and Cymbidium Lowianum. Cypripediums too were in good form, and the white Cyclamens were splendid. Amongst other plants were Clivias, Selaginellas, Ferns, Palms, Crotons and Anthuriums. The second position was accorded to Mr. James, Castle Nursery, Norwood, for a good arrangement. Orchids, Acacias and Crotons were prominent in this exhibit.

As has been said, the miscellaneous exhibits were numerous and of high quality. Messrs. Paul & Sons, Old Nurseries, Cheshunt, staged a collection of hardy plants, for which they were accorded an extra prize. Hepaticas, Saxifragas, Hellebores, and Chionodoxas were prominent. For a group comprising Daffodils in variety, Iris alata alba, Primulas, Hellebores, Snowdrops, and Dog's-tooth Violets, Mr. T. S. Ware, Hale Farm Nurseries, Tottenham, received an extra prize. One of the best features of the Show was the exhibit from Messrs. Wm. Paul & Sons, Waltham Cross, which was composed of Camellias and Roses. Amongst the latter, Madame Hoste, White Lady, Corinna, Madame Pernet

Ducher, and Lady Henry Grosvenor were very fine; and of the Camellias, Marchioness of Exeter, C. M. Hovey, Guillaume III., Archduke Carlo, Beauty of Waltham, Aulica, and alba plena were amongst the most beautiful (extra prize). Messrs. Wm. Cutbush & Son, Highgate, showed a group of Epacris, Ericas, Boronias, and Dendrobiums, which was charming. The extra prize was well merited. Mr. Jannoch was accorded an extra prize for a group of superb Lily of the Valley; as also were Messrs. J. James & Sons, Farnham Royal, for Cinerarias. Messrs. B. S. Williams & Sons, Upper Holloway, staged a handsome exhibit, consisting of Lilacs, Clivias, Azalea mollis, and Staphylea colchica (extra prize). Messrs. J. Laing & Sons arranged a small group, composed mainly of new and rare plants, such as Grevillea Banksi, Variegated Nicotiana, Ophrys muscifera (Fly Orchid), and other plants. Bouquets, wreaths, and crosses were shown by Miss E. Holyoake, Gipsy Hill; Miss Jackson, Upper Norwood; and Mr. J. Morter, Westow Hill.



FRUIT FORCING.

Vines.—*Earliest Houses.*—Colouring will shortly be proceeding in the very early started houses. To insure well-developed berries afford a thorough supply of tepid liquid manure, and mulch the border at once with an inch or two thickness (not more) of partially decayed manure, preferably rather lumpy. Stable litter, having the strawy portions shaken out, thrown into a heap and, when commencing to heat, turned over twice, forms excellent mulching material. This will give a stimulus to the roots and secure healthy foliage, while the moisture will be sufficient for the Vines until the Grapes are cut; but they must not suffer for lack of water, as this will cause the premature ripening of the wood and loss of the principal leaves, which may induce fresh growth when the Vines should be going to rest. Damping must be continued until the Grapes are well advanced in colouring, after which reduce the moisture gradually, and insure a circulation of warm air day and night by regulating the ventilation judiciously. The temperature should be maintained at 70° to 75° in the daytime, with a rise of 10° to 15° from sun heat, allowing the temperature to fall during the night to 65° or even 60°.

Vines in Flower.—Afford a circulation of warm rather dry air, and a temperature of 65° to 70° at night for Black Hamburgs and similar varieties, and 70° to 75° for Muscats. The latter and other shy-setting sorts should be brushed over with a camel's-hair brush about the time the blossom is fully expanded, so as to rid the stigmas of the caps and glutinous substance, choosing a warm part of the day after the house has been rather freely ventilated. This will render them fitted for fertilisation, which should be effected by brushing them over with a brush surcharged with pollen taken from such free-setting varieties as Black Hamburgs and Alicante.

Succession Houses.—*Disbudding.*—It is not good practice to attempt this until the bunches appear in the points of the shoots, and then it ought not to be done in a hurry, nor a large reduction made at one time. Proceed gradually and with discrimination, so as to give as little check to the Vines as possible. Retain no more shoots than can have the full benefit of the light, as crowding is one of the greatest evils in Vine culture. Allow for the due extension of the laterals, for on this depends sustained root-activity till the crop is perfected.

Stopping the Growths.—The bearing shoots should be allowed to extend in accordance to the space. If this is limited, the Vines being close, the shoot may be pinched at the first joint beyond the bunch, and this should be done when the leaf at the joint is the size of a penny. If there is moderate space between the rods, allow two joints beyond the show of fruit. Where there is abundance of room allow the shoots with fruit to extend three or four leaves beyond the bunches before taking out their points, doing this when the leaf at the stopping joint is the size of a farthing. Laterals will push from the joints both above and below the bunches. Those below may be rubbed off, except from the two lowest leaves, which should be pinched at the first joint, or if there is a good distance between the spurs on the rods all the laterals below the bunch may remain, pinching to one leaf. But laterals above the bunch may either be pinched to one joint or allowed to extend until the available space is fairly furnished, then pinch and keep them within bounds afterwards by stopping to each joint of growth as made.

Thinning.—This is a very important operation, both as regards the bunches and berries. Remove all superfluous and duplicate bunches before they flower. Setting depends on the good form of the bunch and on its receiving the essentials of fertilisation. Free-setting varieties may have the berries thinned as soon as they are out of flower, but Muscats and other shy setters should not be thinned until it is seen which berries have been properly fertilised by their taking the lead in swelling. Every berry should have room to swell without becoming wedged, and yet leave enough berries to insure the bunch retaining its form when cut.

Watering, Feeding and Mulching.—Until the Vines are in leaf they require very moderate supplies of water, sufficient only to keep the soil

moist, but when the leaves are full sized the evaporation from them is considerable, and from that time until the fruit ripens they must not lack water at the roots. It is difficult to state how often the borders will need watering through their being so variable in dimension and formation. A narrow border will require watering twice as often as one double the width, assuming the Vines to be equally extended and cropped, while a border of loose material will need water much more frequently than one formed of firm retentive loam. Consequently the grower must be guided by the state of the Vines in relation to the rooting area and have due regard to the weather, as water will be required much oftener in hot, dry weather than when cold and dull. The proper procedure is to examine the border, and when water is necessary give it abundantly. Surface dressings of chemical manures are of much benefit for the health of the Vines and the swelling and perfecting of their crops. There are several advertised which are excellent for their respective purposes, and may be applied at rates varying from 4 ozs. to $\frac{1}{2}$ lb. per square yard at intervals of three to six weeks. It is better, however, to supply half quantities at less distant intervals, and it is best to afford due moisture by watering and then use the fertiliser and work it in moderately. A dressing may be given as soon as the Vines start into growth, a second when they are going out of blossom, another after the Grapes have been thinned, a fourth during stoning, and a final one when the Grapes commence the last swelling, or just before or when beginning to colour. Liquid manure is more prompt in action than a top-dressing, and may be supplied whenever watering is required, taking care that it is not too strong and is warmed to the mean temperature of the house. Vines restricted to narrow borders will need higher feeding than those with larger rooting areas, affording liquid manure whenever water is requisite, but it is well to change the food occasionally. A mulching of short, sweet, lumpy manure, as stable litter freed of straw, about an inch thick, and added to from time to time so as to maintain that thickness, is excellent for ordinary borders, but those composed of light, porous materials should have a mulching of well decayed manure, as it lies closer and the roots of the Vines are attracted to it through its retaining moisture better and longer.

Late Vines.—If started in February they will be swelling their buds and have the whole season before them. Use the syringe twice a day, seeking to insure a good start by closing the house with a genial humid but not saturated atmosphere at a temperature of 75°. The canes of young Vines having been fixed in a horizontal position the buds will break evenly, if not depress their points still more. Let the inside border be brought into a thoroughly moist but not sodden condition. The outside border will be sufficiently protected by a fine tilth of soil, or if very firm and close at the surface a light mulch of lumpy, partially decayed material will protect the young fibres from chill and accelerate surface rooting while feeding the Vines. When lumpy and not more than a couple of inches thick it is of great benefit in preserving uniform moisture, while admitting of the free access of the sun's warmth and of rain and air.

Large Varieties of Grapes.—Start any houses of these without further delay, especially the thick-skinned varieties, as a long period of growth is required to produce highly finished fruit with good keeping qualities. Syringe the rods twice a day, or maintain a moist atmosphere by damping the floors in dull weather, as it is not advisable to keep the Vines constantly wet. It is decidedly advantageous to cover the inside borders with a little fresh stable litter freed from straw, and add to it from time to time so as to insure an atmosphere charged perceptibly with ammonia. Night temperature 50° to 55°, 55° by day artificially, and 65° from sun heat.

Late Hamburgh Houses.—For affording the latest supply of these and similar thin-skinned Grapes allow the Vines to break naturally. If the Grapes are thinned by early June, and the fruit ripened by the end of September, it will suffice. Ripened earlier they are liable to lose colour and quality by hanging, which is not peculiar to Black Hamburgh but to all Grapes with thin skins, though black Grapes lose colour more decisively than the so called white varieties.

Young Vines.—Those planted last year and cut back to the bottom of the rafters or trellis at the winter pruning must be encouraged by gentle fire heat, to allow time for their making and perfecting a good growth. The laterals should have their points pinched out at the first leaf to a height of 6 feet up the canes, which will cause the buds in the axils of the principal leaves to form fruit buds and become plump for next season's fruiting, but above that height they may be allowed to grow. It is a better plan, however, to stop the cane at about 7 feet 6 inches, train a lateral from it as a continuation, stop this at 3 feet, and so on until the top of the house is reached, stopping all laterals to one joint and sub-laterals to one leaf as made. This secures thoroughly solidified growth and a stout cane from the base upwards.

Planting Young Vines.—This should be done when they are starting into growth and not more advanced than an inch or so. Where provision has been made for inside and outside borders the Vines should be planted in the former, which will be sufficient for several years, as a width of 4 feet is ample the first year, and about 2 feet width can be added annually. Some growers prefer to do this every second or third year, adding to the border about 4 to 6 feet width. The Vines, if cut-backs of last year, may be shaken out and placed in position, either before or after they have grown to the extent of an inch or two, the roots being disentangled and spread out evenly in the border, covering them about 3 inches deep, and watering moderately to settle the soil about them. Vines of the present year's raising will not need to be

planted for some time yet. They are preferably raised in squares of turf, and may be planted when the roots are protruding through the sides, the breaking of the rootlets extending beyond favouring a fibrous root formation, or if in pots they should be turned out before they become root-bound. They will require to have a temperature at planting suitable to Vines in growth, that is 60° to 65° at night and 70° to 75° by day, with an advance of 10° to 15° from sun heat. Vines of last year, however, should be allowed to start unaided, syringing them two or three times a day according to the weather, and ventilating freely at 65°, with a little from 50°.

Vines for Early Fruiting in Pots.—Cut-backs of last year's raising should receive their final shift, so as to allow time for them to make and perfect a good growth early. The pots (12 inches in diameter) must be clean, efficiently drained, and have a layer of the roughest of the compost on the drainage. Avoid bones as they favour eelworm. Pot firmly in good fibry loam with about a tenth of old mortar rubbish, a quart each of soot and Thomas' phosphate, and half a gallon of wood ashes to each barrowful of loam. Bottom heat is not necessary, but if they are plunged it should not exceed 80° to 85°, and they must not remain in that so long that the roots enter the plunging material. Keep the house rather close, and if the weather be bright shade for a few days. Train the canes about 1 foot distance from the glass, and give all the light practicable to insure the solidification of the growths. Pinch the laterals at the first joint, and subsequent growths treat similarly, stopping the cane at about 8 feet, and stop the laterals from the uppermost joints a little less closely, so as to prevent the principal buds being started.

THE KITCHEN GARDEN.

Asparagus.—Where the soil is of a retentive nature sowing Asparagus seed should be delayed till it has become drier and warmer, and in transplanting fewer failures occur after rather than before top growth has commenced. It does not follow, however, that the sites for either seed or roots should not be prepared in anticipation of sowing or planting time. On the contrary, an early opportunity ought to be taken in preparing the ground or beds, so that the work of sowing or planting may be done expeditiously and well. Medium to light soils with a warm fairly holding subsoil best suit Asparagus, and in this case it may be grown on the level; but if the soil is of a somewhat clayey nature raised beds are decidedly the best. Ordinary bastard trenching, with good manure freely mixed with both spits, is all the preparation warm light soils need. When raised beds are decided upon these may be either 4 feet wide and hold three rows of plants, or 3 feet wide and hold two rows, allowing 2 feet alleys in each instance. Stake out the beds and then throw out the top spit right and left. Should the subsoil be clay, wheel away a good spit of this and substitute a mixture of mortar rubble, decayed garden rubbish, half-decayed stable manure, road trimmings, and any other free soil procurable. On this return the top spit, mixing with this some of the materials indicated. By the time the beds have settled somewhat, sowing or planting may be done. Beds may be formed on the surface of clay if the latter is well drained, while gravelly or loamy subsoils may be improved by the addition of some or all of the previously mentioned materials. Warmth and a moderate amount of moisture are of more consequence than richness accompanied by excessive cold and moisture.

Jerusalem Artichokes.—Although these can be and often are grown for several years in succession on the same plot of ground, they succeed better and the tubers are of superior quality when a change of site is given. In any case there should be some system of culture adopted. Allowing the plants to come up how and where they like is a slovenly proceeding. These Artichokes are suitable for planting in plots outside of the garden walls, but in a young state must be protected from rabbits. Give them the benefit of freely manured, deeply dug soil, and plant 12 inches apart, 6 inches deep, in rows 3 feet asunder, taking care not to break the strongest sprout when covering with soil. The new white-skinned form is the best in every way. Old tubers should be cleared of sprouts and stored in moist sand for present and future use.

Chinese Artichokes.—*Stachys tuberifera*, better known as Chinese Artichokes, soon shrink when out of the ground. Undug they are perfectly hardy, and are liable to become a nuisance. Left to themselves they come up very thickly and spread rapidly, every true tuber growing. Already top growth has commenced, and no time should be lost, therefore, in forming fresh beds. These ought to be raised rather above the ordinary level, and be both fairly rich and free working. They may be 4 feet wide with 1 foot alleys between, and hold three rows of plants. Open drills 3 inches deep and plant the tubers 9 inches apart.

Globe Artichokes.—Old clumps that have been heavily protected with litter should have this removed, but not so as to suddenly expose the half-blanching growth to the action of easterly or other cold winds. Another fortnight or three weeks will be soon enough for forming fresh plantations, but the site may well be prepared in advance. No crop better repays for high culture. It is the more vigorous young plants that produce the finest, most succulent heads in abundance and long succession, and it is a good practice to root out a row or a few old clumps, and insert a corresponding number of young plants each season. They ought to have ground double dug and heavily manured, mixing some of the latter with each spit. Seedling Artichokes vary surprisingly, and not more than one-quarter of them are of any value.

Early Broccoli, Autumn Cauliflower, and Brussels Sprouts.—In order to be certain of abundance of plants of Veitch's Autumn or other early Broccoli, other than Snow's Winter (this is best sown late in April) as well as Autumn Giant and Eclipse Cauliflowers and Brussels

Sprouts, sow the seed either on a mild hotbed or in boxes, and place under glass. Thus treated every sound seed will germinate, the seedlings will escape slugs and Turnip flea, and be soon fit for pricking out on a warm border. If Sprouting Broccoli is grown in quantity, and it is very hardy and serviceable, seed of this also may well be sown under glass, but midseason and late Broccoli, Borecole, Savoy, and Chou de Burghley should not be raised nearly so early. Late in April or early in May is, as a rule, soon enough to sow seeds of these. The plants only spoil in the seed beds when raised too early.

Sowing Tomato Seed.—It is not a good practice to raise Tomato plants intended for the open air at the same time as those wanted for house culture. Kept in small pots till the stems are very hard and the plants generally starved they are a long time in recovering, late crops resulting accordingly. Sow the seed now or during the next week thinly in pots or pans, and keep the seedlings growing steadily and strongly till the time arrives for planting them out. Most varieties succeed, or would do so if no disease affected them; but special mention might be made of Earliest of All, Sensation, Conference, Al, Lady Bird, Laxton's Open Air, and Challenger. Golden Queen and Blenheim Orange are fine yellow varieties, which also succeed well against sunny walls.

Seakale Cuttings.—Cuttings of strong roots or thongs will grow if placed direct in the open ground, but stronger plants result if the cuttings are first started in boxes. Cut the roots into 3-inch lengths, and snip off a short slice from the thinnest end by way of a guide when dibbling them in. Ordinary bedding plant boxes answer well, filling these with good light soil. Make this firm and dibble in the cuttings thickly sliced end downwards, and only leave the tops just exposed. Top and bottom growth soon commencing with the aid of a very little warmth, and the plants must be put out before becoming matted together. Lily White is the best form to grow.

THE BEE-KEEPER.

APIARIAN NOTES.

BEES AND THE WEATHER.

THE weather, which has been of a boisterous nature for some time past, culminated in storms of hail accompanied with thunder on the 11th inst. At the time of writing the weather continues unsettled, but the barometer is rising gradually, and the wind is calm, so I hope spring will usher in a glorious change, and flowers rapidly expand. The earliest springs are not always the best for bees, but 1894 has been an exceptional season so far as it has gone. Early in some things yet late in others, few of them being allowed to show their charms for want of sunshine, while the storms ruined almost every flower, and thousands of bees fell before their fury.

Breeding has been going on extensively during the whole winter. Although many bees have been lost, the hives appear as strong as they were in the autumn, and I have no doubt with milder weather for some weeks to come they will be in good strength by the time the fruit trees are in blossom.

ROBBER BEES.

Robbing weak and queenless hives will be attempted by stronger ones. The bee-keeper ought, therefore, to keep an eye on this, and check any attempt at the beginning, for although bees are not so apt to rob during the spring as in the autumn, nevertheless, once they begin, it is not an easy matter to stop them. Moreover, they do injury to themselves and to the rest of the hives, for the constant annoyance prevents weaker hives working. Be careful to avoid spilling syrup about, or leaving it in feeders throughout the daytime, especially with weak hives, and upon no pretext whatever attempt that questionable proceeding of outdoor feeding. It does no good, but much harm proceeds from the practice.

Keep weak hives' entrances contracted consistent with the number of bees, and give queenless and drone-breeding hives something to work for in the shape of queen-rearing, or join them to an adjacent hive, with all necessary precautions to prevent slaughter. A thorough saturation of the bees with syrup or honey will be effectual if thrown together when fully gorged.

TRAPPING BEES.

Catching fertile workers and drone-breeding queens is not often an easy task. The former is well nigh impossible, while the latter are sometimes so slender and small that the majority of bee-keepers cannot detect or catch them. In fact, these drone-breeding bees are mostly shy, cunning, and quick in their movements, always attempting to elude the eyes and hands of the bee-keeper. When these bees are so numerous in the hives to make it worth while to bother with them adopt the following plan:—If the hive is of one division put a sheet of perforated zinc No. 8 in the middle of the hive, brush the bees from one half of the combs, keeping every bee in the other half. Then cover the hive, and place a trap on the entrance to entice the bees out. They cannot re-enter, but will

take up their abode amongst the bare combs. The operation should be done on a fine day, when the majority of the bees are trapped out from their queen or fertile worker. Remove the combs and bees, putting them into an empty hive, and stand it near the one trapped. The bees will naturally take to their original entrance and combs, while the other half will have very few bees, and the queen will be easily detected, when she should be killed. If it be a fertile worker allow one or more of the brood combs to remain to induce her to stay, but all the rest return to the original hive, along with a frame of brood or a piece of brood comb with eggs inserted in one of their own frames. They will set to work immediately and raise one or more queens.

If the hive is of two or more divisions, after making sure the queen is not in the under one, place the sheet of perforated zinc between the first and second divisions, keeping the original entrance in its primary state, but put the trap on the second or third entrance. When most of the bees are enticed out from their queen or fertile worker remove the combs as advised above in the single-divisioned hive, replacing as many of the combs as possible, always making sure the laying bee is under your control. A piece of comb containing eggs and larvæ and placed amongst the trapped bees will insure queen-rearing.

THE BEST TRAP.

I have found nothing better than the original trap described in the *Cottage Gardener* long ago, but instead of glass, talc, or horn I prefer thin tin or other sheet metal. I bend pieces cut about 2 inches by $\frac{1}{4}$ inch in the middle over a wire, tapering the upper half so that it does not hinder the rise and fall of the traps. After they are all bent I clip a little piece off each side, so that the centre at the hinge is broadest. I then fix the wire with the traps to little blocks 2 inches long by $\frac{5}{8}$ inch high by $\frac{1}{2}$ inch thick, covering both sides with a thin board. The wire carrying the traps is passed through a hole near the top of the thick pieces, the trap lying at an angle of about 45°. A thick piece of board bevelled and covered on the top answers very well.—A LANARKSHIRE BEE-KEEPER.

TRADE CATALOGUES RECEIVED.

W. & J. Birkenhead, Fern Nursery, Sale, near Manchester.—*Ferns and Selaginellas.*

W. Atlee Burpee & Co., Philadelphia, U.S.A.—*Sweet Peas.*

Charles Clark & Co., 20, Great St. Helens, London, E.C.—*List of Spraying Appliances.*

W. A. Manda, South Orange, New Jersey, U.S.A.—*Pocket Garden Dictionary.*

T. Smith, Daisy Hill Nursery, Newry.—*Hardy Alpine and Herbaceous Plants.*



***All correspondence should be directed either to "THE EDITOR" or to "THE PUBLISHER." Letters addressed to Dr. Hogg or members of the staff often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post, and we do not undertake to return rejected communications.

Hardy Flowers (Inquirer).—We have received your comprehensive request, but it cannot be inserted this week; and in the meantime you will, perhaps, favour us with your name and address, which we presume were inadvertently omitted.

Grafting Paradise Stocks (J. B.).—The stocks having been planted at the beginning of the year will not start into growth so early as those which have not been moved, and should not be worked until the sap flows more freely—say, at the end of this month or early in April. It may be done when the buds commence breaking, taking care to keep the scions quite dormant, as they will by inserting in damp soil or sand on the north side of a wall or fence. Whip grafting is the best method for small stocks, and it can be practised on much smaller stocks than crown grafting. The grafts should be inserted about 6 inches from the soil, as it is necessary the trees have a clear stem above the ground to derive the benefit of the stock. Cover the joint with grafting wax after securing the scion with bast.

Stacking Manure (W. B. H.).—If you raise a station of soil 6 inches thick, and on this stack the manure, also spread 2 or 3 inches of soil on every layer of about 1 foot thick, then cover the heap with soil, there will be small loss of ammonia, and by turning the whole heap, including the soil at the base, you will have a good compost for use in the autumn or when needed.

Catkin (Ignoramus).—A catkin is a form of inflorescence consisting of a number of scales called bracts arranged on a spike, each bearing a unisexual flower, as illustrated in the tassel-like male flowers of the Willow, the Nut, and the Poplar. A catkin is not a perfect flower. We presume this is what you desire to know; but your card was evidently written hurriedly, and the terms are somewhat ambiguous.

Beetles in a Tomato House (C. G.).—The examples sent are, as you surmised, one of the click beetles, the larvæ of which, as "wireworms," are so frequently destructive, this particular species being *Agriotes* or *Elatér obscurus*. It is not the common species to which the name wireworm more specially applies, yet also injurious, as you have found it to be, though its occurrence on this Tomato is somewhat unusual. Trapping the larvæ or grubs is certainly a good plan of thinning their numbers; also the destruction of the mature insect. The mischief done by this group of insects is intensified by the fact that, though small, they live and feed in the larval stage for two, or even three, years. Though the usual time for the beetles to emerge is July or August, a portion of a brood will occasionally be found in spring, their development being hastened by a warm summer and autumn preceding.

Pruning Clematis (Idem).—The Clematis does not appear to have made much growth, and the soil must either be poor or have been very dry last summer. Shorten the stem about one-fourth or a little more—that is, if there are buds on it, as there should be, and spread a layer of manure 3 inches thick on the soil over the roots, covering the ground 2 feet from the stem in all directions, and give water copiously once a week in hot weather. If the ground is dry and poor now give a good soaking with liquid manure, soot water being excellent. Allow the mulching to remain and decay.

Strawberry Plants Unsatisfactory (T. L.).—The pistillate parts of the flowers of *Vicomtesse Hericart de Thury* are imperfectly formed and developed, indeed, they are nearly sterile, and the fruit can only set badly if at all though the anthers laden with pollen. It is a peculiarity of the strong-growing and later form of *Vicomtesse Hericart de Thury*, which is not such a good forcer as the dwarfier growing sort sometimes called *Garibaldi*. The plant is quite healthy, and the disaster is solely due to variety, over-luxuriance, and the want of thorough ripening and formation of the crowns. Had the plants been started a little later, and not been brought on too rapidly, the fruits would have set very much better. If you have any more plants bring them on more slowly, preferably in a cool house or one with a temperature of 40° to 45° at night, 50° by day artificially, and you will be well rewarded for the patience. The other plant, *Auguste Nicaise*, a poor sample of that fine variety, is blind, that is, it has not formed any flower buds in embryo, and cannot possibly throw up any trusses. It is one of those vagaries in Strawberries against which growers cannot be too careful in safeguarding themselves by layering runners only from fruitful plants. The plant is very unlike the true *Auguste Nicaise*, which is much more downy-leaved, also altogether more compact and sturdy in habit, being larger and highly coloured fruit.

Treatment of Ferns (F. D.).—You are right in assuming that much more peat is used in the compost for these plants than is really necessary. The cost of good peat after it has been conveyed a long distance by rail is a considerable item annually where plants are grown on a large scale. Many Ferns grow equally well in good loam, rough leaf mould that has laid for twelve months, and sand, with the addition of sandstone broken to pieces, or soft bricks. Large plants in many cases do not need potting more often than every second year. When large plants of *Davallia Mooreana* begin to be bare or crowded with old rhizomes the plants should be broken up and repotted. They lose a few fronds, but soon recover and grow all the better afterwards. Large plants may be potted every second year, cutting away a few of the old rhizomes so as to work a little fresh soil amongst them, and they soon start into growth again and grow vigorously. This Fern does not need deep root room, and large shallow pans for it are infinitely better than pots. It makes a splendid basket Fern were plenty of room can be given it. If pieces are planted in baskets 18 inches over, the rhizomes will soon creep all round it and prove more effective suspended from the roof than a plant in either a pan or pot. *Microlepia hirta cristata* is a useful decorative Fern, but the stove is too warm for it. In too much heat it soon becomes a prey to scale. The roots of large plants can without injury be reduced, and in a short time they soon grow vigorously again. This Fern usually produces a number of small crowns, which at potting time should be taken off and potted singly. They make handsome plants for decoration in 5 and 6-inch pots, and if well hardened they stand in good condition for a long time. Plants that have been used for this purpose soon start again into growth, when they can be cut into two or three and grown on for the same purpose again. Stove *Adiantums* will do in the same compost, and strong growers will bear the reduction of their roots without much injury, where this must be done to keep them healthy in the same size pots. The more delicate the variety the greater should be the care in reducing them. All Ferns that it is necessary to increase in size should be placed into larger pots without disturbing their roots.

Double-spathed Arums (Richardias) — (B. & S.).—The specimen you send is very far from being new to us. We have had many of the same nature sent to us from time to time during the past ten years. The large spathe is very fine, nearly 7 inches wide, and over 10 inches long. The plant must have been well grown. We have heard that similar examples (two-spathers) are only produced under high cultivation, but do not know whether the statement is correct or not. Perhaps some of our readers can supply information. We have received a similar specimen from Mr. W. E. Tidy, which he thinks is a novelty. Probably it is in his locality, but judging from the many examples that have been sent to us we suspect there must be hundreds of double-spathed Arums in the country.

The Cucumber Tree (H. F.).—We have before said that this popular name is applied to the *Averrhoa Bilimbi*, a native of Goa and other parts of the East Indies, and is now cultivated in South America. The tree is only about 8 feet high, and produces a beautiful green, smooth, fleshy fruit, of the size and shape of a small Cucumber. Rheede says that the fruit when ripe is excellent to eat, but when unripe they are preserved with sugar, or vinegar and brine, and although it should be of an agreeable acid flavour when ripe, yet before they are ripe they are excessively sour. Burman says they contain a grateful acid juice, from which a syrup is made, and a conserve of the flowers, which are esteemed excellent in fevers and bilious disorders. Rumphius seems to think that, even when fully ripened, the fruit can never be eaten raw, but is only used to cook fish, fowl, and other viands, to give them an agreeable acidity, in the same way as we use sorrel and verjuice; they are pickled in brine and eaten as we do olives or capers in conjunction with meats; and preserved in sugar, or with a little saffron, they are recommended to be eaten by those who go sea voyages.

Names of Plants.—We only undertake to name species of plants, not varieties that have originated from seed and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in firm boxes. Slightly damp moss, soft green grass or leaves form the best packing, dry wool the worst. Not more than six specimens can be named at once, and the numbers should be visible without untying the ligatures, it being often difficult to separate them when the paper is damp. (*Howarth, Sheffield*).—1, *Cœlogyne cristata*. 2, An *Oncidium*, but specimen insufficient for positive identification, possibly an extra good form of *sphecelatum*; 3, *Selaginella Emiliana*. (*J. R. S. F.*)—*Helleborus foetidus*. (*H. P. B.*)—*Magnolia conspicua*. (*A. F.*)—*Cypripedium barbatum*. (*X. Y. Z.*)—1, *Platyserium alaicorne*. 2, *P. Wallichii*. (*Reader*).—*Allium neapolitanum*. (*D. C.*)—1, *Deutzia crenata flora-pleno*. 2, *Amygdalus communis*. (*F. S.*)—*Acacia Drummondii*. (*Hester*).—1, *Adiantum tenerum*. 2, *A. Bausei*. 3, *Davallia Mooreana*. 4, *Selaginella Willdenovi*.

COVENT GARDEN MARKET.—MARCH 21ST.

MARKET quiet, with a slack demand for house vegetables. Grapes gradually rising in value.

FRUIT.

		s.	d.	s.	d.			s.	d.	s.	d.	
Apples, per bushel	2	6	to	9	0	Lemons, case	.. ..	10	0	to 15	0
" Nova Scotia, per						Peaches, per doz.	.. ..	0	0	0	0
barrel	12	0	24	0		Plums, per half sieve	.. ..	0	0	0	0
Cobs	45	0	0	0		St. Michael Pines, each	.. ..	2	0	6	0
Grapes per lb.	1	0	3	0		Strawberries per lb.	.. ..	4	0	10	0

VEGETABLES.

	s.	d.	s.	d.		s.	d.	s.	d.				
Asparagus, per bundle	..	7	0	to 8	0	Mustard and Cress, punnet	0	2	to 0	0			
Beans, Kidney, per lb.	..	0	6	1	0	Onions, bushel	..	3	6	4	0		
Beet, Red, dozen	1	0	0	Parsley, dozen bunches	..	2	0	3	0		
Carrots, bunch	0	3	0	4	Parsnips, dozen	..	..	1	0	0	0
Cauliflowers, dozen	2	0	4	0	Potatoes, per cwt.	..	..	2	0	4	6
Celery, bundle	1	0	1	3	Salsify, bundle	..	..	1	0	1	5
Coleworts, dozen bunches			2	0	4	0	Scorzonera, bundle	..	..	1	6	0	0
Cucumbers, dozen	2	0	6	0	Seakale, per basket	..	..	1	3	1	6
Endive, dozen	1	3	1	6	Shallots, per lb.	..	..	0	3	0	0
Herbs, bunch	0	3	0	0	Spinach, bushel	..	..	1	6	3	0
Leeks, bunch	0	2	0	0	Tomatoes, per lb.	..	..	0	6	0	9
Lettuce, dozen	0	9	1	0	Turnips, bunch	..	..	0	3	0	0
Mushrooms, punnet	0	9	1	0							

AVERAGE WHOLESALE PRICES.—CUT FLOWERS.

Orchid Blooms in variety.

	s.	d.	s.	d.		s.	d.	s.	d.
Arum Lilies, 12 blooms ..	1	6	to	3	0	Narciss, White (French),			
Azalea, dozen sprays ..	0	4	0	6	dozen bunches	3	0	to 5	0
Bouvardias, bunch	0	6	1	0	Pelargoniums, 12 bunches	6	0	12	0
Camellias, dozen blooms ..	0	9	2	0	Pelargoniums, scarlet, doz.				
Carnations, 12 blooms ..	1	6	3	0	bunches	4	0	6	0
Daffodil or Lent Lily ..	1	6	2	0	Primula (double), dozen				
" double	2	0	3	0	sprays	0	6	1	0
" single	2	6	9	0	Primroses, doz. bunches ..	1	0	2	0
Eucharis, dozen	2	0	4	0	Pyrethrum, dozen bunches	2	0	4	0
Gardenias, per dozen ..	6	0	9	0	Roses (indoor), dozen ..	1	0	2	0
Hyacinths, dozen spikes ..	2	0	4	0	" Tea, white, dozen ..	1	0	3	0
Hyacinth, Roman, dozen					" Yellow, dozen	2	0	4	0
sprays	2	0	6	0	Roses (French), per dozen	3	0	6	0
Lilac (French) per bunch	2	6	4	0	Roses, Safrano (English),				
Lilies of the Valley, dozen					per dozen	2	0	3	0
sprays	0	6	1	0	Roses, Maréchal Neil, per				
Lilium longiflorum, per doz.	3	0	6	0	dozen	3	0	6	0
Maidenhair Fern, dozen					Snowdrops, doz. bunches ..	1	6	3	0
bunches	4	0	6	0	Tuberose, 12 blooms ..	0	6	1	0
Marguerites, 12 bunches ..	2	0	4	0	Tulips, dozen blooms ..	0	6	1	0
Mignonette, 12 bunches ..	3	0	6	0	Violets, Parme (French),				
Myosotis or Forget-me-					per bunch	2	0	3	6
nots, dozen bunches ..	3	0	6	0	Violets, Ozar (French), per				
Narciss, Yellow (French),					bunch	2	0	2	6
dozen bunches	1	6	2	6	Violets (English), dozen				
Orchids, per dozen blooms	1	0	9	0	bunches	0	9	1	0

PLANTS IN POTS.

	s.	d.	s.	d.		s.	d.	s.	d.
Arbor Vitæ (golden) dozen	6	0	12	0	Ferns (small) per hundred	4	0	8	0
Arum Lilies, per dozen	6	0	12	0	Ficus elastica, each	1	0	7	6
Aspidistra, per dozen	18	0	36	0	Foliage plants, var., each	2	0	10	0
Aspidistra, specimen plant	5	0	10	6	Genista, per dozen	9	0	15	0
Azaleas, per dozen	24	0	42	0	Hyacinths, per dozen	5	0	9	0
Cineraria, per dozen	6	0	12	0	Lilium Harrissi, per dozen	15	0	18	0
Cyclamen, per dozen	9	0	18	0	Lycopodiums, per dozen	3	0	4	0
Dracæna terminalis, per dozen	18	0	42	0	Marguerite Daisy, dozen	6	0	12	0
Dracæna viridis, dozen	9	0	24	0	Mignonette, per doz.	6	0	10	0
Ericas, per dozen	9	0	24	0	Myrtles, dozen	6	0	9	0
Euonymus, var., dozen	6	0	18	0	Palms, in var., each	1	0	15	0
Evergreens, in var., dozen	6	0	24	0	(specimens)	21	0	£3	0
Ferns, in variety, dozen	4	0	18	0	Solanums, per dozen	9	0	12	0
					Tulips, per dozen	6	0	9	0



SWINE FEVER.

THIS is a form of disease which has caused and is causing so much inconvenience and such serious losses to farmers that the efforts now being made by the Board of Agriculture to stamp it out ought to receive the hearty co operation of every breeder of pigs. Upon the face of it this would appear to be a simple enough matter, the fever having been described as a specific, contagious, and infectious fever, affecting the pig, associated with local disease of the lungs, the lymphatic glands, and the mucous membrane of the digestive canal. That a disease so clearly defined should be easy of detection would seem to be a certainty; yet Dr. Klein proved long ago that swine may suffer from swine fever in a perfectly well-defined form, readily transmitted to other swine, without showing any of the distinctive signs of the disorder, and in some cases without the appearance of any symptoms of illness. Herein lies the chief risk to the purchaser of store pigs on market.

It is within our own experience that sturdy robust looking stores, apparently perfectly healthy, and satisfactory in every way so far as appearance goes, may be purchased with every assurance by the dealer that they are a bargain. Yet sooner or later they go wrong; they either had swine fever before being driven to market or caught it while there. How it is impossible to say, for where the disease exists its germs may spread through an entire market, to the subsequent loss of all who purchase store pigs there to feed at home. To the dealer it is not so serious a matter; acting in perfect good faith he may buy and sell fever-struck swine with the symptoms so undefined that no one concerned in the transaction has any suspicion of fever. So the disease is spread far and wide, the most secluded farm suffering alike with that near the market, and sufferers by heavy losses from this vexatious cause may well inquire what is to be done.

Probably the stamping out process is far more difficult than is commonly supposed. The mere slaughter of every pig upon a farm should be followed at once by a much more thorough process of disinfection than is usual. Old wooden structures with unsound floors are the most difficult to deal with—so difficult that the disinfection is anything but thorough. It is only when the buildings are of brick or stonework, and the floors of concrete, that disinfection can be thorough. In all buildings where microbes or disease germs can effect a lodgement in woodwork or floors, the case appears hopeless indeed. It has been distinctly laid down* that the imperfect cleansing and disinfection of premises may be reckoned among the causes which have contributed to the continuance of swine fever, notwithstanding the operations of regulations which might have been expected to produce good results. Very frequently swine are kept in places which cannot be cleansed and disinfected effectually, so as to make them safe for the next pigs

* Report on Swine Fever in Great Britain, by Professor Brown.

which will be brought in as soon as the place is declared free. Old half decayed styes with mouldy floors cannot be cleared of infection by any known process. The only course in such cases is to remove the infection-saturated timber and soil, and submit them to the action of fire; but no power is vested in the authorities to do this necessary work, and the only expedient which they can employ is that of refusing to declare the infected premises free until the necessary alterations and improvements are completed.

So the matter stands, and it is obvious that while pigs are so frequently kept in unsanitary buildings, and are removed from them alive for sale in open market, so long will swine fever continue to break out with more or less virulence. This is clearly a matter for legislation. Once make it penal to use improper buildings for swine, and a real step in the direction of prevention will have been taken. It is indeed hard that those who are doing their utmost to stamp out this fearful pest should have their efforts defeated by the carelessness of those who pay no heed to sanitation—have no sense of moral obligation in this matter.

WORK ON THE HOME FARM.

Grass land reserved for hay has been dressed with chemical manure, bush-harrowed and rolled. On park land where there is much timber, much dead wood is blown down by winter storms; we allow the labourers' wives to have this upon condition of clean work being made in the collection of it. A thorough harrowing with bush or chain harrows spreads and breaks up the excreta of sheep and cattle, which has some slight manurial value—only slight when grazing animals are allowed to ramble about. It is only in folds that sheep ever impart a thorough dressing of manure to land. Yet many a dairy farm do we know where not one penny is ever spent upon chemical manure, nor is a sheepfold ever set. Can it be matter for surprise that the pasture of such neglected land is poor, or that it is practically worthless in even a short drought?

A poor meadow falling in hand at Lady Day has set us thinking what can be done with it to obtain a useful bite this season. It is so poor that we cannot use nitrate of soda alone to be safe, and we have decided to use with the nitrate some steamed bone flour and muriate of potash, say a hundredweight of each of the nitrate and bone flour, and half a hundredweight of potash. With showery weather in April this will do some good, and the prospect of April showers this year is favourable. Next autumn this meadow will be drained and subsequently manured systematically. There is always a risk of waste in the use of manure on land imperfectly drained. As a general rule drainage should come before using manure, but there are exceptions, and this is one of them.

Do not forget to make due provision of other green crops besides pasture. Mixed seeds, Clover, and Sainfoin have been sown with corn. We prefer sowing Italian Rye alone, as it becomes useful quickly, and under generous treatment it grows with marvellous rapidity. It is alike useful for cows, cattle, sheep in folds, and the hay is excellent for horses, very superior to the wiry Timothy hay of which so much has been imported recently.

METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude, 111 feet.

DATE.		9 A.M.					IN THE DAY.				Rain.
1894. March.		Barometer at 32°, and Sea Level.	Hygrometer.		Direc- tion of Wind.	Temp. of soil at 1 foot.	Shade Tem- perature.		Radiation Temperature		
			Dry.	Wet.			Max.	Min.	In Sun.	On Grass.	
		Inchs.	deg.	deg.		deg.	deg.	deg.	deg.	Inchs.	
Sunday	11	29.517	49.8	47.9	S.W.	42.8	55.2	45.6	89.8	38.3	0.022
Monday	12	29.697	43.9	40.1	S.W.	42.2	52.0	38.6	86.9	32.1	0.250
Tuesday	13	29.211	42.1	38.6	W.	42.4	50.9	41.2	94.9	39.9	0.012
Wednesday	14	29.559	41.2	38.3	W.	42.2	50.9	34.1	92.0	29.2	0.402
Thursday	15	29.411	41.8	40.2	N E.	42.1	50.1	39.3	96.4	36.6	—
Friday	16	29.847	39.4	36.8	N.	41.9	50.7	29.2	92.3	23.0	—
Saturday	17	30.227	35.4	35.2	N.	40.9	49.4	30.9	91.6	23.3	—
		29.638	41.9	39.6		42.1	51.3	37.0	92.0	21.8	0.686

REMARKS.

11th.—Overcast and damp morning, with a heavy shower at 11 A.M.; bright sunshine most of afternoon.
 12th.—Fair morning, with alternate gleams of sun and spots of rain; frequent slight showers in afternoon, and continuous rain from 5 P.M. to midnight.
 13th.—Frequent rain from 2.30 A.M. to 7 A.M.; generally sunny from 9 A.M., but occasional slight showers, especially in afternoon.
 14th.—Brilliant sunshine all morning; occasionally cloudy in afternoon, spots of rain at 4.15 P.M., and rain from 8.30 to midnight.
 15th.—Steady rain till 5 A.M. and showers later; overcast morning, alternate cloud and sunshine in afternoon.
 16th.—Almost unbroken sunshine throughout.
 17th.—Misty early; bright sunshine from 8.30 to sunset, and clear cold night.
 A rather variable week, with much bright sunshine. Frequent showers in the first half, and cold nights at the end. Temperature on the whole slightly above the average.
 —G. J. SYMONS.



ON more than one occasion during the past few weeks young gardeners have been told in these pages if they aspire to eminence in their vocation a knowledge of botany, chemistry, languages, shorthand, and kindred subjects of more or less importance is essential. Opinions, however, vary as to the value of these accomplishments compared with practice, and the matter may be advantageously referred to again. That an acquaintance with botany and vegetable physiology generally, chemistry, injurious insects, and fungoid enemies of garden crops forms a valuable auxiliary to a gardener's education no one can possibly confute; but even these qualifications should not be gained at the expense of a thorough practical training. Without the latter the former is comparatively worthless. Theory and practice must go hand in hand, and then "Science is the torch that lights the pilgrim upon the path of progress." From this probationers will learn the desirability of becoming skilled in the practical details connected with their calling, and to bear in mind that "great things from little causes spring." By doing this a keener interest for acquiring knowledge will be awakened, which ultimately broadens the mind and enables one to grasp the more difficult points connected with the pursuit of gardening. All, therefore, who take an interest in beginners should teach them the necessary rudiments that will subsequently lead to success; and, moreover, counsel young men to seize the opportunities of gaining information not only from the writings of veteran practitioners which abound in the *Journal of Horticulture*, but from the object lessons that are continually arising in well appointed gardens.

Lessons of a practical nature are, of course, forthcoming in a garden of any pretensions whatever, at all periods of the year; but at no time are they so numerous or more valuable than during the spring. Plant life, both under glass and outdoors is now awakening, gardens are full of interest, and activity reigns on all sides, affording those persons who look beneath the surface a suitable occasion for observing much that may be useful to them in years to come. Especially is this so in the sowing of seeds for the production of a plentiful and continued supply of vegetables, as well as the forcing of fruit and flowers. It has been said, and possibly with some truth, that the culture of vegetables is neglected by the majority of young men, with the result that many an otherwise proficient gardener finds himself wrecked on this rock on taking his "first charge." This is a matter for regret, and more so when we consider that the probational days of many men are spent in establishments which afford special facilities for acquiring knowledge of such an important phase of horticulture.

Many years ago the writer, whilst undergoing a practical training "in the houses" for a series of years in one of the largest gardens in the kingdom, had it instilled in his mind by the chief that the production of a supply of good vegetables all the year round was a more difficult matter than thinning Grapes or managing Orchids. There were no opportunities for gaining information on the first named point other than by taking a walk round the kitchen garden after working hours with a note book in hand during the spring and early summer, this, however, being sufficient to make a record as to what seeds were sown on certain days and the position they occupied. Subsequent visits were made and a diary kept as to when the various crops were ready for use. These notes proved serviceable

in after years whilst managing a kitchen garden and certain crops were required at stated periods. A similar method to that mentioned may advantageously be followed by young gardeners, and the fact of their being employed in the houses need not necessarily prevent them taking object lessons from the more humble and too frequently despised vegetable garden. A better plan, of course, would be to serve a few years in that department, and doubtless many readers will corroborate the statement that such time will be well spent. Changes are now being made, and young men will do well to consider whether the "next place" shall be under glass or in the kitchen garden. The latter may prove more laborious work, but the experience gained will weigh heavily in the scale against such a minor objection, and it is safe to assert that none will regret following the advice here given. There are many lessons to be gleaned relative to the time and method of seed sowing and planting, to say nothing of manuring the soil and the rotation of crops.

Whilst urging probationers to study the requirements of the vegetable garden, it may be as well to remind them of the many lessons which it is possible to learn under glass at this period of the year. Where fruit forcing is extensively practised ample facilities for gaining valuable information will be afforded, and young gardeners should take advantage of these. Those who have charge of vineries or Peach houses, for example, ought to take note of the time the trees were started into growth, the temperatures employed, and, in due course, the period of ripening. The same applies to Strawberries in pots, the forcing of which is now generally adopted in gardens. In some establishments it is a rule to have ripe fruit in January, and from that month until the outdoor crop is ready a supply of Strawberries must be maintained. To produce this at a minimum of cost and labour, with perhaps limited conveniences, a gardener has to be thoroughly conversant with the necessary details, which can only be acquired by taking to mind the lessons of everyday practice.

Another matter that requires care and forethought, and which affords many a lesson to young gardeners at this season, is that of ventilating glass houses. The disastrous effects of injudicious "air-giving" are known to all experienced cultivators, and to them a mere reference to the fact will doubtless seem superfluous; but there are many as yet not far advanced in their business, and to whom a few hints may prove suggestive. Vines now bursting into leaf need close attention in this respect, for a few minutes of cold, cutting wind will do irreparable damage to the tender shoots, and probably result in the loss of a crop of fruit. Some years ago a young gardener, who is now not altogether unknown in the horticultural world, was taught a lesson in ventilating that he had good reason not to forget. It happened during March, and whilst a bitterly cold northeasterly wind was blowing strongly, a sudden burst of bright sunshine following a blinding snowstorm. A house containing Vines moderately advanced in growth was under his charge, and during a temporary absence, the lights being closed, the temperature rose to much beyond the maximum figure. Fearing the wrath of the head gardener, who was one of the old school, and rather arbitrary on matters of this sort, the youth opened the front and back ventilators somewhat widely to induce a lowering of the temperature, and then went to dinner. Alas! an hour was all too much, for the tender leaves of the Vines had turned black and curled at the edges, whilst the embryo bunches, but a short time before fresh and vigorous, were hanging, so to speak, by a brown thread. The effect on both the gardener and his assistant can be better imagined than described, but it cost the latter his situation, and the lesson thus taught has never been forgotten. It is to avoid such an undesirable state affairs that young gardeners are advised to master the rudiments of their calling, and, as before remarked, to do this notice must be taken of the object lessons which daily occur in gardens.

There are many more points of paramount importance that might be referred to in connection with the practical training of young gardeners. The repotting of plants and propagating by seeds and

cuttings, are now being actively carried on in most gardens, and whilst probationers usually employed under glass are well versed in these matters, others engaged outdoors should, if opportunities occur, also make themselves proficient in such operations. The same may be said of grafting fruit trees. This is now being done in many places; but it does not follow that all garden assistants know how to graft a fruit tree, or that they are specially desirous of taking lessons in an accomplishment of this kind. It is most desirable, however, that the latter should be done; indeed, it ought to be the aim of every probationer to make himself thoroughly proficient in all practical phases of gardening. Accomplish this and work perseveringly, then study science diligently, and, provided other essentials are forthcoming, success will be ensured.—C.

ABOUT VINES.

AT this season of the year, while we are busy with the growing Vines, our thoughts revert to the previous crop of Grapes. With some it may have been satisfactory, and while certain growers achieved greater success, there were doubtless a few who failed to reap anything like their expectations.

Beginning now at the practical part. How much pleasure there is and will be in the vinery for the cultivator! All will now show the handiwork of the grower—house clean, borders top-dressed, and Vines, unless it be the very late ones, extending their laterals. The earliest Black Hamburgs, even without hard forcing, are indeed showing well. I consider our method of Vine growing far more rational than of old. I do not deprecate the modes of private growers, having had a fair share of them myself, and therefore know full well their difficulties; yet I shall always say the market growers, with their rough and ready ways, have done more to popularise Grape growing. Who a quarter of a century ago would have ventured to speculate on Grape growing as now practised by the largest of market men? Leaving out the question of the enormous number of Vines now being cultivated, look at the condition under which crops are produced annually. The borders, be they inside or out, are of a natural ready-made kind—made at the title of the expense of older days. I admit the market grower selects his site when he can, yet this is not always so, and private growers by being wise can in these days, when they have the chance of building, keep their border well above ground, and if the drainage is right they will not be far wrong.

A more extended knowledge of the feeding power of the Vine, with the right mode and time of application, combined with the improved chemical or prepared Vine manures, have been of the greatest service to the grower. Aiming at economy, as all are supposed to do, we have much in our favour in these days—to wit, less border space, which, if in proper condition, will require the least possible cultivation, for beyond the very slight pointing before putting on the top-dressing, we have no work such as digging or wheeling in of cartloads of manure. We have also gained by knowing exactly the growing condition and requirements of the roots. Who is there now who gives half the water to the borders before Vine breaking as used to be given? Vine roots, though apparently dormant for at least two or three months in the winter, are really at work in conveying the sap to the stem and buds. To do this, providing the border soil is in a fair moist condition, no drenchings of water will be required before there are leaves on the Vines. More is gained by attention to this than is supposed, the borders under the proper conditions being thus much warmer, this inducing earlier new root action. I am now basing my remarks on inside borders, the best for at least all early and midseason Grapes, and I also prefer them for the late crops. Neither do we now attempt to gorge the borders early with rich material, which is not a necessity then, preferring rather to wait until the crops are farther advanced. Knowing also the late action of the roots we cause a storing up of rich sap by autumn feeding, which will be of the greatest use before and in the spring. We now clear our Vines of fruit by the new year at least—a most excellent thing—relieving not only the Vine of its load, but also saving fire, and giving a certain rest for the Vines.

In this article I cannot pretend to record all that can or has been done by growers with limited means. Much can be done, but the aim again should be to get the most in the quickest time, and with the least expense. Vines now being in leaf, see that nothing is lost by allowing superfluous growth. Last spring I referred to this matter, and can only repeat that after a lengthened observation, I still adhere to what I then said—a continuous one-leaf stopping, unless for special reasons a more extended growth is required. Whatever may be said of the abuses of fire

heat, I am fully persuaded that the free use of this is being more fully recognised than it used to be. Grapes in cold houses there always will be, I suppose; yet I venture to assert that such fruit, good as it may be, can never be of the value of that produced with even a little continuous fire, not occasional, nor will the cold-grown crop ever be satisfactory for hanging after ripe.

Thinning can never be done too early. To cut out large berries is only another form of waste. See that all is done before the berries stone. Heavy waterings and artificial manuring can then be done effectively, and again when final swelling takes place. Berries when standing still are having strength made for them, by the very active condition of the new roots. Ventilation is oft repeated, yet if not done properly the Vine or its crop will tell a tale. Cleanliness is a necessity; should there be the least sign of red spider sulphur the pipes at night and keep them hot for a few hours. I have, however, by thoroughly washing the foliage with water from the hose, of course before colouring begins, kept it well down.

I am as particular in the autumn with regard to all minor details as in the spring, not only with the regulation of growths, as also ventilation and watering. Never have I found any benefit from a wild extension of growth, so even when early Grapes are cut I still keep the foliage well in hand. What I believe is gained by a continuous close stopping of the Vine laterals, is the general free showing of not only buds which break well for the next season, but such breaks are very fruitful.—STEPHEN CASTLE, F.R.H.S.

[The best flavoured Gros Colman and Alicante Grapes we have tasted this season were grown by our correspondent.]

STOVE AND GREENHOUSE CLIMBERS.

WHILST many of our stove and greenhouse climbers conform more or less readily to the twisting and bending necessary to confine them within the limits of a trellis for exhibition, freedom alone can develop those traits of character to which that form of training is inimical. Many of the strong and vigorous growers, requiring abundance of head room, are impatient of root restriction under pot culture, and delight in being planted out. They cannot always be planted in borders, as in some houses, in which climbers are most desirable, encaustic tiles or other ornamental flooring plays too prominent a part. In such instances boxes form a happy medium, for these, while allowing more freedom, do not place the roots beyond control. They can be made of any shape, size, or depth, as space allows; and virgin cork will cover a multitude of faults in the way of home-made boxes. Where houses are permanently wired for climbers, a fault too often noticeable is the insufficiency of space left between them and the roof, resulting in a mass of tangled growths crushed against the glass. In a less degree, effects are marred by the conscientious tying-in of every stray shoot, savouring too much of the exhibition trellis—a necessary evil in that department.

With those climbers which by intuition throw out their octopus-like tentacles and grip the nearest object, a friendly hand is needed to guide their misdirected efforts, but others need little beyond some inconspicuous support. Among the latter class the Bougainvillea deservedly takes a high place. An occasional length of fine wire, stretched at right angles to the branches, allows the heavy laden panicles of bracts to droop gracefully and meet the eye pleasingly. On page 184 Mr. Garner records his experience of this plant under greenhouse treatment. I can endorse his remarks. So grown the results are far beyond anything obtained in the humid atmosphere of a shaded stove. It is sun that this plant needs, then heat is not inimical. The finest specimen I have seen was planted in strong bottom heat in a large span-roof stove. In about three or four years it extended to 30 feet, and was such an object of admiration in bloom that members of the family not only paid it daily visits, but came to see it by moonlight, by which the effect was distinct and striking. It was unshaded. The house was built for a Pine stove, though other things crept in. Amongst them were some fireflies from the Bahamas, being, as I understood, the only specimens ever introduced alive, and therefore may be mentioned.

Allamanda Hendersoni or other of the rambling varieties, planted with the permanent rods secured to wires running lengthways of a house, the lateral annual growths allowed to hang loosely, is a glorious plant, requiring ample room, but no shading. Thus treated it flowers profusely for from six to seven months of the year; from one plant I am able to cut basketfuls for table decoration when the messenger says, "Send up plenty of Yallamanda." The quality and standing powers of these blooms are vastly superior to those miffy ones produced under the moisture-saturated air of a shaded roof.

Whilst passing through the embryo stage of a gardener's life in a Kentish nursery nothing impressed me more vividly than a plant of *Stephanotis* planted in the common soil—the fat yellow loam of Kent—and filling the roof of the house. The wealth of flower each season was lavishly produced. All the care bestowed on it was the annual pruning and washing with Gishurst compound on a short winter's day; happy place, where mealy bug was unknown.

In some gardens, particularly the old-fashioned ones, a range of lean-to houses is midway relieved by a lofty central structure, nominally a greenhouse or conservatory, built more for outside effect than inside utility, where space may be limited except in an upright direction. For such a house *Tacsonia* Van Volxemi is from its rapid growth and pleasing habit a valuable climber. A satisfactory way to treat an unsightly roof is to stretch light wires from the top wall plate from which the roof springs to the opposite one, thus forming a ceiling of greenery, shutting out the roof. Few who see this *Tacsonia* thus treated, with a crop of its crimson starry blossoms pendant from the threadlike stems, would fail to think it was the right thing in the right place. *Solanum jasminoides* is a charming plant, its hardy constitution enabling it to stand where more tender kinds fail; and interesting is the quaint chocolate flowers of the deciduous *Akebia quinata*. Hardy as this and the *Solanum* are, their best conditions are developed under glass.

The different *Lygodiums* are chaste and elegant climbers, not so often seen as they deserve to be. Neither tying nor training do they require. Cut down at this season as the new fronds are starting, and during potting peg securely in the centre a single length of bell wire, with the wire strained to a nail in the roof, when up they will go 10, 12 or 15 feet, be it stove, greenhouse or Fern house, shade or sunshine. In the autumn or winter they readily adapt themselves to house or church decorations. By disengaging the wire from the roof they are easily carried, sniting pillars, windows, or arches, and are something out of the common, with a distinct tone of colour from those useful decorative climbers, the *Asparagus plumosus* and *Smilax* (*Mediola*).

Cissus discolor is pre-eminently a lover of tropical heat, moisture and shade. With me, a plant in the border at the foot of a back wall has appropriated the whole space, and in its annual growth monopolises the greater part of the roof, while armfuls of streamers have to be shorn to keep it within bounds.

An end or back wall of a house, especially if of porous brick, retaining moisture, is according to temperature admirably adapted to some of the most beautiful of our climbers, amongst which are *Pothos*, *Æschynanthus* Lobbi and fulgens, the latter furnishing fine sprays tipped with bloom for large vases. *Begonia glaucophylla* never seems quite happy in any other position; and many an ugly corner or bit of wall left bare from unsuitableness to other plants may be draped with that friend to gardeners *Ficus repens*, which appears to hold the same position under glass that the Ivy does outside.

In concluding these few notes on that important class of plants, our stove and greenhouse climbers, I am constrained to offer a weak apology to the large family for omitting to mention many of the members by adding that they have at least been thought of.—E. K., *Dublin*.

LOROPETALON CHINENSE.

THE accompanying illustration (fig. 39) represents a spray of *Loropetalon chinense*, an early flowering shrub that does not appear to be generally grown in gardens. It was shown by Messrs. J. Veitch & Sons, Royal Exotic Nurseries, Chelsea, at the Drill Hall, Westminster, on the 13th inst., when the Floral Committee of the Royal Horticultural Society awarded a first-class certificate for it. It is quite hardy, is said to attain a height of 3 or 4 feet when fully grown, and when covered with white narrow-petalled flowers is very ornamental. The above mentioned firm introduced it from the Khasya Mountains and China in 1880.

MASTERING THE ONION MAGGOT.

THIS important question is well worthy of the prominence given it in the pages of the *Journal of Horticulture*. The ravages of this pest in some localities is such as to almost destroy the whole crop annually, in spite of every precaution taken to prevent such devastation. A good crop of Onions in these parts is a rarity, whereas in other districts there is but little trouble with the enemy. I feel sure many cultivators would welcome any positive remedy as a great boon to ensure a full crop of this indispensable esculent. The only specific I know is to continually syringe the plants with a mixture of petroleum and dissolved soap, and even

this does not always succeed in preventing the destruction of a goodly portion of the plants.

One drawback is that at the time most attention is required there are also a multitude of other matters needing the same amount of care. Constant warfare, however, is necessary where the fly is troublesome, for, as Miss Ormerod tells us, the Onion maggots only remain in the bulbs about a fortnight, when they usually leave and enter the earth and turn into the pupæ state, from whence flies emerge in from ten to twenty days to again begin the work of destruction, and so the round goes on while any Onions remain. An important matter is to pay particular attention to the plot from which the crop of Onions have been removed during the autumn and winter months. This consists in using every endeavour to exterminate the last batch of pupæ, which bring forth the earliest flies in the forthcoming season.

The soil here being light I am now turning my attention to



FIG. 39.—LOROPETALON CHINENSE.

heavier dressings of clay marl, especially near the surface, together with such substances as will build up a robust constitution in the plant. Thus at the same time it will make it more difficult for the fly to deposit its eggs. I have tried all kinds of surface dressings prior to sowing when the ground has been carefully prepared, but they have little effect in the prevention of the attack of the fly. From my experience very early sowings in boxes, thence transplanted, are no more exempt than the others. As a matter of fact the autumn-sown Onions get attacked, and these must naturally be harder in the skin than those raised early inside. Anyone doubting this would soon be convinced if living in this district and he wanted a dozen or two of sound bulbs for any particular object, say about the end of July. I might place Carrots and Parsley in a similar list.

There is no trouble in getting the spring-sown crop to start growing well. The plants usually look all one could desire until they get about 6 inches high, then the work of destruction begins. There is no need to thin the plants. I think the chief remedy must be applied from the top. But what is to be the positive remedy? I hope some good Samaritan may be found to propound it.

I have a strong recollection of a contribution entitled "Success with Onions," from the pen of Mr. John Chinnery, in the *Journal of Horticulture* for March 24th, 1892, page 213. Therein he states that he took a crop of Onions weighing 25 cwt. from a plot of ground measuring 104 square yards. That year I well remember

my crop from a plot of ground of similar dimensions was almost annihilated. I pondered deeply over that article. I should be pleased if Mr. Chinnery would oblige by stating the routine he would adopt if he were circumstanced as growers are in this district. His advice could not fail being valuable.—J. J. CRAVEN, *Allerton Priory Gardens, Liverpool*.

I HAVE not been much troubled with Onion maggot, and consequently have never made any special preparation of the ground in anticipation of it, but twice with an interval of three or four years when the plants were 3 or 4 inches high, I found them very badly attacked I instructed my gardener to saturate silver sand with petroleum, and to strew the mixture freely along the lines of the Onion plants, with the result that the disease was checked at once, the plants assumed perfectly healthy form, and on each occasion the ultimate crop was quite equal to the average. Of course, petroleum was the active agent, and any friable dry soil might take the place of the silver sand.—E. TONKS.

BEING a defeated cultivator of Onions and Carrots through the ravages of the maggot, which neither soot nor petroleum nor late sowing will prevent, so far as my experience goes, I did not mean to give evidence, but to hear it. Having read some of it, I desire to record a haphazard success. In the spring of 1892, owing to the previous cold and wet summer, my Strawberry plants were not so robust as they usually are the spring after planting, so I resolved to have a line of Onions between the rows. The seeds were sown under favourable conditions. The main crop was delayed several days through rain coming, and ultimately the seeds were sown under very unfavourable circumstances. Although but a few days elapsed between the sowings, which were only a short distance apart, the early sown Onions were ahead of the latter the whole season, and did not present a single bad bulb, while the latter had scarcely a sound one. This, I think, goes far to corroborate reliable evidence, and urges Onion growers to have two sowings, one early and the other late, and if the latter are swarming with maggots destroy them.—W. T.

YOUR correspondent, "W. K. W." (page 198), seems to jump at the conclusion that he is the lecturer to whom I referred on page 159. Of course whether he is or not I am not in a position to say; but he must have misunderstood the true aim of my appeal, and also the spirit with which I referred to the lecturer. He is certainly under a delusion when he refers to me as the person who asked "the very foolish question, with the object of raising a laugh at his expense," as during the lecture alluded to I never uttered a word. He also mistakes the meaning of the little joke about the "Professor" with the long names, as I wrote with the object of showing more clearly that, with regard to all difficulties, whether from pests or diseases, the great object to be aimed at was the cure, or to make my meaning plain, something that by a judicious application at certain seasons would ultimately thoroughly eradicate the pest.

So far from any desire to ridicule the lecturer I may add that his lecture was very plain and interesting, and the principal points referred to by him all tended to show that good cultivation is one of the main roads to success with everything. But the lecturer did not say that he had any remedy that would really destroy the Onion maggot, only to prevent it attacking the crop; and knowing him to be a thoroughly practical man, I came to the conclusion that if anything definite on the subject had come before the public he would have mentioned it. I think that "W. K. W." will agree with me that my appeal has elicited some very valuable information on a very important subject, and I hope hundreds of readers may be benefited by it and as deeply interested as myself, and then I shall feel that "the very foolish question" was not asked in vain.—W. S. E.

TIMELY HINTS ABOUT SPRING BEDDING.

SPRING-FLOWERING plants are now fast unfolding their beauty, and will continue to increase in attractiveness during the next two months. The flowers of Snowdrops and Crocuses have once more faded, and left fresh green masses of leaves behind; but these early harbingers of springtime, whose bright beauty is always missed, are so quickly followed by a variety of other flowers that we speedily cease to lament their loss, while admiring the varied beauties of the attractive blossoms which succeed them.

Scillas and Chionodoxas are now giving attractive lines or masses of rich colour. I find them extremely effective for planting closely in small beds, where they can be left undisturbed. I place the bulbs about 4 inches deep. During the summer these beds are

filled with Musk, Lobelia, or some other dwarf-growing plant which does not necessitate very deep digging. By giving a good coating of well-decayed manure during the autumn the bulbous plants may be left undisturbed for years—in fact, till they have become so crowded as to require more room for development. The earlier kinds of Hyacinths are also beginning to open their flowers, and so are the French Anemones, both double and single varieties being extremely effective.

The plants already treated of are excellent for a detached group of beds, as they flower within a short time of each other, make a distinct feature, and do not interfere with the arrangement of the main portion of the flower garden, which is expected to be at its best by the end of April. Suitable plants for providing a display about that time are Aubrietias *Leichtlini* and *Friebelli*, Arabises *alpina* and *alpina variegata*, Myosotises in variety, Wall-flowers, Polyanthus, Cerastium *tomentosum*, Alyssum *saxatile*, Daisies and Violas. I have several beds edged with Sedum *aureum*, which looks extremely attractive with its golden tipped stems and leaves throughout April. *Silene pendula*, edged with white Viola *Marchioness of Tweeddale*, makes a splendid bed by the first week in May.

I have the above named plants in flower simultaneously. A good deal of attention is required from the present time onwards. When the soil is fairly dry upon the surface the beds should be gone over and have the soil pressed firmly around the plants, making good any vacancies which occur, finishing by stirring the surface with a Dutch hoe. This hoeing should if possible be repeated each week, as nothing tends so much to forward the flowering time as this cultural operation, which admits the warmth of sunshine into the comparatively cold ground, and thus sets the forces in motion which Nature has provided for stimulating the growth, which is considerably retarded in springtime through lack of warmth in the soil. It is also necessary to have the beds furnished as evenly as possible, and any plants, therefore, that show signs of growing weakly should receive assistance by applications of liquid manure, or a little soot strewn between them in showery weather. Timely attentions to such details as these leave the unmistakeable mark of finish upon the beds so treated when the plants are in flower.—H. DUNKIN.

PROPOSITIONS ON FRUIT.

MR. GEORGE COLE of Canterbury, a diligent advocate of extended fruit culture on enriched soil, and also of improved methods of packing, sends us seven propositions. Our correspondent's desire is most commendable, and he enforces his views with great ability in various newspapers, appearing always ready for a tilt with objectors to his propositions. He wishes (1) to feed the soil with whatever manures may be available, as he knows that much fruit-growing matter is wasted while land is starving; (2) he wishes to have the fullest and best possible supply of home-grown fruit; and (3) he desires that it shall be sorted and packed in a manner to tempt instead of repel purchasers, as is the case with vast quantities of fruit bundled into the markets. The propositions are as follow:—

1, No Apples in the world are equal to English Apples properly grown in an average season, and our other fruit—namely, soft fruit, is as good as can be grown in any country in the world.

2, A great deal of our fruit is gathered unripe so as to allow it to stand five or six times "handling," and shooting from one basket, or measure, or scales into another, and finally into a paper bag—for instance, Red Currants. It is not a quarter so well packed as is fruit from abroad.

3, That the quantity of fruit now eaten in England is nearly double that eaten fifteen years ago, and might be doubled again in six more years.

4, That we could grow all the hardy fruit we need by utilising London and other town manure, which can often be had "for fetching away." Corn can be imported in sacks from any distance, fruit cannot.

5, That every family which now affords to have butter or cheese or bacon for breakfast ought to have, and would like to have, a quart of good, well-ripened fruit on their table daily for eight months in the year, but they do not have it because it is so difficult to get good, clean, sound, and fresh at a fair price. Whereas anywhere, and at any time, we can get tinned American fruit, dried American or Normandy Apples, bottled French Plums, and dried or preserved Carlsbad Plums, in attractive packages.

6, The railways bring up a ship's cargo of foreign fruit in half the time to London and other towns—say, from Portsmouth, Southampton, or Folkestone—that they will convey soft fruit from Kent. For instance, Canterbury Strawberries must be "on rail"

at 5.30, or at latest at 6 P.M., to arrive at Covent Garden at six, or seven, or eight next morning after shunting and jarring about at sixteen stations all night; while similar foreign fruit from Southampton is conveyed by the South-Western Railway altogether quicker and cheaper.

7, One of our most delicious fruits—viz, Raspberries—people far from the growers seldom have, except as an occasional luxury, or as a little “flavouring” to a pie, as they might add essence of lemon or some expensive sauce. Surely the country which makes tinplate to send to America for the Californian grower to pack his fruit in, might manage a tin or box or basket for fresh Raspberries! I and my family purchase Raspberries all through the four or five weeks’ season, and have as many as we care to eat for breakfast daily for four people for an average cost of 1½d. per head per diem.

HYBERNATED CATERPILLARS.

WE can quite understand how caterpillars can live and thrive during the winter months if buried deeply in the earth, or even near its surface, and also how they can defy the weather when they are encased in the wood or bark of trees. But the existence of other hybernating caterpillars that pass the months from the autumn to spring is more surprising, for they run the risk of frosty winds and of moisture, which is still worse to them; then the perils of being devoured by hungry birds is one to which they are liable, and if they are of a species that is injurious to cultivated plants, to meet their death from the hand of man. As a rule, the hybernating caterpillars exposed to the weather eat nothing for six or eight months, and furnish instances of patience and endurance. During such a wet and stormy season as that we have been passing through many of these caterpillars must have been killed, which is quite as well for gardening interests. Even those that construct winter nests to protect themselves do not escape the influences of heavy rains, which produce a kind of fungoid disease upon their bodies. I observed a notable proof of this a few years ago in the case of broods of the brown-tailed moth (*Liparis chrysorrhæa*), the caterpillars of which feed chiefly on Whitethorn and Blackthorn, and being gregarious make a silken abode for their winter habitation. For many years they occurred upon several lines of hedge near Chalk in Kent, but one rainy winter destroyed all their colonies in the locality. It may be esteemed a fortunate circumstance that this species, once such an enemy to English fruit trees, now leaves them alone, preferring other food, but abroad it is still troublesome, and might easily become so here. I have advised my friends who own orchards to keep watch for nests every autumn lest the caterpillars should re-appear on Apples or Pears, and it is then really easy to extirpate them if discovered. Also it is advisable to clear off the showy black, white, and scarlet caterpillars in summer should they occur on Hawthorn bushes near fruit trees.

Some of the caterpillars that hybernate are hairy or downy, and so are protected, partially; the common caterpillar of the moth, called the drinker, is a good example. It is clothed with hair, even to the feet; we find it in the spring upon grassy banks, seldom about gardens. In them, especially amongst vegetables, keeping through the winter on or near the soil, we may see the caterpillars of the great tiger moth (*Arctia Caia*); possibly they feed a little in low plants when the weather is mild. Apparently many of these die from some cause or other, perhaps through parasites, since the female moth deposits about 700 or 800 eggs, but in its numbers the species keeps to an average most years. Or it may be that the brightly coloured, sluggish moths frequently fall victims to birds. We know it from other garden “tigers” by the long hairs of silky grey which rise above the black ones, and it is a caterpillar which feeds early in the spring, rather voraciously. It is partial to Lettuces, and also attacks Strawberry plants; in flower borders it has been observed to infest young Hollyhocks. Is not, I may remark, this a serious objection to the sufferance of weeds amongst fruit trees or shrubs that they may, and often do, supply food to caterpillars and other insects which are liable to damage our crops? We have a prominent instance in the case of the troublesome aphides, some species of which live for a time each year upon various weeds, and afterwards migrate to trees or taller plants.

The larvæ or caterpillars, which we call “loopers” from their peculiar way of travelling over objects, are some of them hardy enough to brave the winter, smooth-skinned though they are. One of the largest of these that we observe in gardens is that of the swallow-tailed moth. Its angularity might deceive a bird, but it takes the precaution of getting into some hollow or crack, not stirring till spring is well on, when it feeds on several shrubs, and will often descend for change of diet to eat the Forget-me-not if accessible. Much more troublesome is the caterpillar of the Currant or Gooseberry moth, which emerges in the autumn and attracts no notice then amongst the fading leaves, being small and

dingy. The localities it chooses for wintering are various. Many of them make a slight hammock in the bushes from a dry leaf and some silken cords, others retire to the earth and repose under a pebble, others hide in anything handy, such as an empty flower pot. If the bushes are examined and pruned the buds will suffer little from this pest, and subsequent sprayings may be unnecessary; as a final step the scraping off the surface soil is advisable. Caterpillars wintering on the bushes get dislodged by the winter winds, and they, with stragglers about the earth, may then be destroyed. Sundry caterpillars of the thorn moths are hybernators, but they are dwellers in plantations or shrubberies mostly.

A garden visitant, however, is the Lilac Beauty moth (*Pericallia syringaria*). In our clearing for spring operations we may come upon this caterpillar, also expectant on a twig or wall rather worse for wear, yet exhibiting several tints of bright colour which will be brighter when it has thrown off its winter jacket. The leaves of Lilac or Elder furnish food, but the species is not plentiful enough to do damage. When clipping Ivy or adjusting its twigs we come upon the dingy and stick-like caterpillar of the Willow Beauty. Apparently it only resorts to this creeper as a protector from the cold, and as soon as the buds open comes forth to eat the leaves of the Rose or Plum. On the Hawthorn and Apple, occasionally on the Pear or Plum, winter small parties of the little ermine moth, snugly hidden upon the twigs, under a layer of gum which the parent spreads over the eggs. The caterpillars hatch late in the autumn, but remain under their covering and do not emerge till the leaves are expanded, when they burrow into them, keeping near each other. About May they have so far increased in size that they can begin to cover the trees with those webs which aggravate the mischief. As the brown gum, which shelters them at first, is very much the colour of the twigs, it passes unnoticed, but by spraying or syringing with water of sufficient temperature to dissolve it, yet not injure the trees, many may be destroyed, and a solution of soap or of Gishurst compound is still more efficacious.

The angle-shades moth (*Phlogophora meticulosa*) is common on garden walls and palings by day twice in the year—June and September. The caterpillar is one of those hybernators that feeds occasionally, eating chickweed or groundsel. It is a leech-like velvety creature, green or greenish brown, with some dark lines and numerous white dots. Early in the spring it changes its diet and feeds upon the young leaves of Chrysanthemums, also of Primroses, Violets, and other garden plants. Also resembling a leech in its front segments, and with curious stripes and lozenge-shaped markings, there comes forth in March the caterpillar of the old lady moth (*Mania mauva*), which has slumbered through the winter. It attains a good size by devouring the leaves of fruit trees till May; sometimes it descends to the ground and feeds upon those of the Strawberry. The caterpillars of the bordered gothic moth, which in the autumn feed upon fruit trees gregariously, when cold nights come descend and hide individually amongst Box or wherever they can till spring rouses them, and they complete their growth by eating herbaceous plants.—ENTOMOLOGIST.

DECORATIVE BRITISH FERNS.

THE BUCKLER FERNS (LASTREAS.)

(Continued from page 104.)

THE family of Buckler Ferns is fairly well represented in Great Britain, no less than ten species existing, all but two or three of which are very common in many parts of the country. These species are the Hard Male Fern (*Lastrea pseudo-mas*), the Soft Male Fern (*L. filix-mas*), the Intermediate Male Fern (*L. propinqua*), the Broad Buckler Fern (*L. dilatata*), the Spiny Buckler Fern (*L. spinulosa*), the Crested Buckler Fern (*L. cristata*), the Mountain Buckler or Lemon-scented Fern (*L. montana* or *oreopteris*), the Marsh Buckler Fern (*L. thelypteris*), the Rigid Buckler Fern (*L. rigida*), and the Hay-scented Buckler Fern (*L. æmula*). Of these undoubtedly the commonest of all is the Soft Male Fern, while the rarest are *L. thelypteris*, *L. cristata*, and *L. rigida*, regarding which, as they have produced practically no decorative varieties, we refer our readers to any of the handbooks on our native species, the others demanding all our space for their just treatment. I may mention, however, that a neatly tasselled form of *L. rigida* has been found, but died, its capacity for sporting is therefore manifest.

It is to Mr. G. B. Wollaston that we are indebted for exact definitions of the three forms of Male Fern, all of which were lumped as one until he established their distinctive characters. *L. filix-mas*, fronds and pinnæ convex, shining pale green, partially deciduous, indusium evanescent, texture papery, pinnules serrate. *L. pseudo-mas*, fronds and pinnæ flat, shining deep green, evergreen, indusium persistent, texture leathery, pinnules smooth-edged. *L. propinqua*, fronds and pinnæ concave, dull pale green, indusium persistent, texture soft, quite deciduous, pinnules doubly serrate.

Its evergreen character therefore entitles *L. pseudo-mas* to the first consideration from the decorative point of view, especially when taken

in conjunction with the handsome sports which it has afforded. Foremost among these is the old and well known variety *L. p.-m. cristata*, or King of the Male Ferns, which is very heavily tasselled at all terminals, and when properly treated assumes the form of a splendidly crested Tree Fern, forming a trunk from 1 to 2 feet high, crowned by a circle of somewhat erect fronds between 3 and 4 feet long. In this condition it justly earns its regal title, and constitutes, indeed, one of the boldest and handsomest members of the Fern kingdom generally. In its natural habitats the Hard Male Fern forms dense clumps built up of numerous crowns, and does not in such cases form a trunk; but if one of these be isolated, and the lateral buds which form be constantly removed, not only does the concentration of energy upon one centre lead to the growth of much bolder fronds, but year by year the crown will rise out of the soil and form a trunk, upon which the tendency to form offsets will diminish more and more. Of course, when a trunk is formed, the general need of Tree Ferns, that their trunks should be frequently damped, asserts itself, otherwise the tiny roots which are constantly creeping down it from the growing top are apt to get starved, and loss of vigour results. Under glass it is a thorough evergreen, the old fronds only falling when the new ones are well advanced. Strange to say though myriads of plants have been raised from spores for many years, it has yielded few secondary varieties. *L. p.-m. cristata angustata* is, however, a worthy scion; this is of smaller growth, and has the fronds very much narrowed, the side divisions being quite short and furnished with abrupt rounded crests instead of tassels. It is a fit companion, and can be treated in the same way to produce a trunk.

The most beautiful of its offspring, however, is of recent origin, and was raised by Mr. Cropper, to whom we are indebted for several charming forms. This is *L. p.-m. cristata fimbriata*, and is an etherealised edition of its parent, which it resembles in habit of growth, but in delicacy of texture and fineness of cutting bears no resemblance whatever. The fronds are quite silky, while the pinnæ and flat many-fingered crests are everywhere fringed with a fine serrulation, of which there is not the faintest trace in its progenitors. Its sporelings are perfectly true, and in the very first fronds show this character markedly. This constitutes one of the Ferns of the future, and is a remarkable example of how Nature can transcend at one jump the highest ideal of the selective cultivator, since not merely an immense advance in beauty of form is created, but an altogether different make and texture. In this respect it is the exact parallel of the "*Kalothrix*" sport in *Athyrium filix-fœmina*. A ramoso form of *L. p.-m. cristata* has been raised by Mr. Fitt; this is crested à la type, but the fronds branch repeatedly as well. This branching character is, however, best seen in *L. p.-m. ramosissima*, found in North Wales; this forms, when well grown, a round bush of branching and cresting fronds of great beauty. It is rare, for though it yields spores sparsely, these do not yield the type, but merely crested plants. Curiously enough North Wales has yielded a crested form almost identical with the "*King*," the crests, however, being branched instead of flatly formed. *L. p.-m. polydactylum* (*Dadds*) is a very beautiful lax-growing form, bold and very distinct; its fronds, however, drop early in the winter. *Willisii* is another polydactylous form of great decorative merit, and *grandiceps* (*Ranbyrd*) is a heavily tasselled one of equal value.

The above are the best of the tasselled forms of normal size, but two dwarf varieties must be added—*crispa cristata* and *Langi* (*crispa cristata angustata*), densely congested dwarf counterparts of the King and his narrow fronded son, previously described. Other curious dwarfs are *Schofieldi*, some few inches high, slightly crested, and its singular offspring, *L. p.-m. ramulissima*, a little plant all branches and crests of the same size. *L. p.-m. crispa gracile* is a little gem with curled pinnæ, and in another group *L. p.-m. revolvens*, with almost tube-like fronds, is a decided acquisition.

The Soft Male Fern has yielded over forty good forms to the hunter, of which the best tasselled ones are *grandiceps* (*Berry*), *cristatum*, *grandiceps* (*Sims*), and *grandiceps* (*Wills*). *Bollandia* is the only plumose variety found; it is pretty when in good form, but very frequently throws defective fronds. *L. p.-m. fluctuosa* is a very pretty crispy form, and *L. p.-m. lux lunæ* is one of the most striking variegated Ferns we possess, the fronds being almost white. *L. propinqua mas* has given us some twenty-eight finds. The best are *cristata* (*Barnes*, *Gott*, *Coward*, *Harrison*), and *grandiceps* (*Barnes*). Many of the others are marred by irregularities.

The Mountain or Lemon-scented Buckler Fern (*L. montana* or *oreopteris*) in the early days of Fern-hunting had for a long time the reputation of extreme constancy, few or no distinct "finds" being made; but later on, by dint of persistent search, a few good things were found, and eventually it transpired that it could hold its own with any of its brethren in the fertility of its varietal resources. Mr. E. J. Lowe describes no less than seventy-seven forms of the species, all of which, with the exception of some very heavily tasselled forms raised by selection by Mr. J. M. Barnes, were found wild. The unusual form of this species is found on well-drained but damp hill slopes, lining especially the sides of mountain streams; it is of pretty general dissemination, existing even in these days of the ubiquitous Fern Vandal in some of the recesses of Epping Forest. It may easily be discriminated from the common Male Fern by its lighter colour, and the fact that the pinnæ or side divisions commence as mere round lobes at the very base of the frond stalk, while in the Male Fern there is a long bare stalk, with well-developed pinnæ, forming an abrupt base to the frond proper. In other words, *L. montana* tapers both upwards and downwards, and the other upwards only. If another proof be requisite, the strong lemon scent evoked by passing a frond lightly through the hands will

settle the question. The Lake District has undoubtedly furnished the major number of beautiful abnormal forms, thanks, in the first place, to the late Mr. J. M. Barnes of Milnthorpe, who made a speciality of the species, and is, we believe, the only one who has managed to raise improved forms through the spores. Curiously enough, though in its native haunts seedlings swarm in every nook and crevice in the rough ground it affects, it is by no means easy to raise it culturally. In our own experience, though prothalli in profusion make their appearance, either from lack of mountain air or some occult climatic influence, Ferns proper are not produced. Mr. Barnes's dictum was "Sow on a slope with a north aspect." We have, however, been successful in propagating from the old root-stock. If an old-established plant be lifted, it will be found to have a thick underground caudex formed of the old frond bases, and if this be severed some distance below the growing crown no harm will accrue to the plant itself, while the severed portion if planted and kept close in a frame develops quite a batch of youngsters from dormant buds.

It is a singular fact, as exemplifying our theory that the fertility of a district in varieties largely depends upon the hunter, that of the seventy-seven forms listed by Mr. Lowe nearly all are Lake District finds, Mr. Barnes setting the example, and inspiring faith in other local hunters by his success. This harvest is the result. On the other hand, the rest of England counts for three, Scotland for two, Wales and Ireland for one each; and yet the species literally swarm in many parts, and we ourselves found two out of the three English forms (*L. m. cristata gracile* and *depauperata*) in three days near one village in Dartmoor. Obviously, therefore, much remains to be done elsewhere. The best crested varieties are the following:—*L. m. cristata*, *cristata gracile* (*Druery*), *coronans* and *ramo-coronans* (*Barnes*), *grandiceps* (*Barnes*), *grandiceps Fosteri*, *ramo-cristatum* (*Barnes*), and *grandiceps* (*Smithies*).

Several very thorough plumose forms exist of this species; *plumosum* (*Airey*) is perhaps the best. Among the curiosities are *L. m. concinnata*, with the pinnæ all twisted like ringlets; *L. m. Barnesi*, an unique form with long narrow fronds, the short pinnæ of which lie horizontally like steps; *L. m. truncata*, found repeatedly, has all terminals ending squarely with a horn projecting for half an inch beyond. We found this three times in Scotland and in Westmoreland, and it is said that all beginners start by finding it. Plants with green and yellow fronds are not uncommon in Westmoreland. Mr. Gott's is perhaps the best; his *crispatisima*, too, is a splendid congested variety. Many others are good, but the above are the *crème de la crème*. When well grown in pots this Fern is very handsome, and when it dies down, as its deciduous nature dictates in the autumn, the pots can be plunged up to their rim in any sheltered corner, and be quite safe until the spring if they do not get dry.

The Broad Buckler Fern (*L. dilatata*) is very different in form from the preceding, having broad triangular dark green succulent fronds on long stipes. It affects quite boggy places, and likes peat. It has not afforded many varieties of merit, but *cristata* (*Oscroft*), *cristata gracile*, and *grandiceps* (*Barnes*), are very fine; while if we may add two forms found in the Azores—viz., *L. d. folioso cristata* and *f. digitata*, we make a splendid quintet. Singular to say, the last two are quite evergreen under glass, while our native finds invariably drop their fronds unless supported. *Howardi* is a curiosity with narrow pinnæ built up of cruciate pinnules.

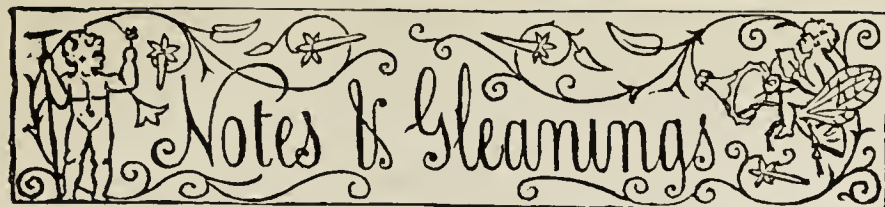
Finally we come to *L. æmula*, the Hay-scented Fern, a charming crispy emerald green plant even in its normal form, while *L. æ. cristata* is a little gem of pretty tasselling, which should be in every collection. It needs close culture and peat in the soil. It is like a small curly form of *L. dilatata*, but to my mind is quite distinct.—C. T. DRUEBY, F.L.S., F.R.H.S.

(To be continued.)

LENTEN ROSES.

MOST gardeners are aware that the species and varieties of *Hellebores*, commonly known as Lenten Roses, are distinct from the popular Christmas Rose (*Helleborus niger*) and its forms; but they are not so extensively grown in gardens. The Lenten Roses are taller in growth, and in a rich soil develop into fine, bushy-like masses. There are numerous kinds in cultivation, these including varieties of *H. orientalis* and other species, as well as hybrids. They produce flowers ranging in colour from white to a deep plum purple, with the intermediary shades of red, rose, and pink, and many of them are beautifully spotted.

The flowers of the type of *H. orientalis* appears to vary in colour, since some authorities give it as rose, others as "dark," and catalogues as white. Those that I have seen as *H. orientalis* were white tinted green and rosy purple. I am informed that a variety of this species, named *Apotheken Bogren*, is more beautiful than the type, and has large crimson purple flowers. Another form, called *Olban Otto*, has white blooms spotted crimson, while *Frau Irene Heinemann* produces rosy purple flowers with crimson spots. *H. orientalis roseus* and *H. o. purpureus* are also excellent varieties, worthy of a place in every garden. Some good hybrids, recently sent out by various firms, include *Bismarck*, deep purple; *James Atkins* and *W. E. Gladstone*, rosy purple; and *Sylvia*, soft rosy pink. *H. olympicus* is a handsome species with greenish-white tinted purple flowers, and of this kind there are one or two varieties that may be included in every collection. These are *Professor Schleicher*, a good white variety; and *roseus*, rosy pink. *H. colchicus* is a grand species with deep plum-coloured flowers, the best forms of this kind including *Otto Frœbel*, purplish carmine. *H. guttatus sub-punctatus* is a vigorous-growing variety, with white flowers faintly spotted purple; and *H. g. Leichtlini* is a handsome form, spotted crimson.—C.



EVENTS OF THE WEEK.—The ensuing week will be a comparatively quiet one amongst horticulturists in the metropolis. The spring Show of the Royal Caledonian Society will be held at Edinburgh on April 4th and 5th.

— **THE WEATHER IN LONDON.**—Since Thursday in last week fine weather has prevailed in the metropolis. Friday and Saturday were fine, but characterised by easterly winds. On Sunday, Monday, and Tuesday the sun also shone brilliantly, and the temperature was above the average. Wednesday likewise opened bright, and at the time of going to press there are indications of the fine weather continuing.

— **THE WEATHER IN THE NORTH.**—We have had a continuation of fine weather during the past week. There has been abundance of sunshine, and most of the days have been almost of summer-like brilliancy and warmth, with hazy mornings and evenings, and occasional touches of frost. A coldish north-east wind for the last three days has only tempered into seasonable coolness, and on Tuesday there was every prospect of a continuance of the present conditions.—B. D., *S. Perthshire*.

— **ROYAL HORTICULTURAL SOCIETY.**—The Society have taken up the subject of Flowering Trees and Shrubs, and, intending to report upon them in the autumn of the present year, would be glad to have exhibits of all such at any of the meetings during the year, as cut specimens or plants in pots, whichever may be most convenient. Such plants in variety as *Pyrus*, *Cydonia*, *Magnolias*, *Almonds*, *Berberis*, *Apples* (Crabs), *Prunus*, *Crataegus*, *Laburnum*, *Flowering Currants*, *Mock Orange* (*Philadelphus*), *Hydrangeas*, *Spiræas* and *Hypericums* may give an idea of what is desired.

— **DEATH OF MR. JOHN JENNER WEIR.**—We regret to hear of the death of this gentleman, which occurred on Good Friday. Mr. J. Jenner Weir was a familiar figure at shows of animals, birds, and flowers. He was a naturalist of high repute, and a member of the Scientific Committee of the Royal Horticultural Society. Like his famous brother, Mr. Harrison, he was much respected, and his sudden death will be mourned by a host of friends. Mr. J. Jenner Weir was seventy-two years of age.

— **LINDLEY LIBRARY.**—The Council of the Royal Horticultural Society offer to subscribe £25 towards the expense of preparing and printing a catalogue of the Lindley Library, if the remainder can be otherwise raised. The Trustees have not sufficient means at their disposal to do more than keep up the current periodicals and purchase a small number of new books each year. They will gladly receive donations for the preparation and publication of a catalogue, the want of which seriously hampers the utility of the library.

— **MR. JOHN CLARK**, Wemyss Castle Gardens, Fifeshire, Scotland, writes to the "American Florist," regarding the Hollyhock disease as follows:—"I have been a grower of these stately flowers for many years (before double flowers were known) and have had to combat with the various diseases which the whole Mallow family is subject to. For some years I have syringed the plants with a weak solution of permanganate of magnesia, and can now grow clean, healthy stock. Anyone can try the remedy, as it is neither troublesome nor expensive."

— **COLLOQUIAL PLANT NAMES.**—Some time ago I became acquainted with an old gardener who boasted of being a "self larnt" man, and who grew *Cinerarias* very successfully, which he always spoke of as "*Cineranys*." *Thunbergias* were a special favourite of his, which, in spite of several hints at correction, he would still persist in naming them "*Thumbvedgers*." The word *Chrysanthemum*, which is so formidable to some individuals, that they prefer cutting it short to suit their own peculiar tastes. Now this old gentleman had a most loveable way of expressing that formidable word as "*Kissantum*." A youth came to me a few weeks ago asking me for a few "*Pelly*" cuttings. "Why," I said, "what are *Pellys*?" Said he, "As near as I can tell you they are a bit like *Gerryanums*." "Perhaps you mean *Pelargoniums*," I said. "Well, yes, I believe that is't name, but I calls 'em *Pellys*."—G. W. R.

— **THE TEMPLE SHOW.**—We were officially informed at the meeting on Tuesday last that His Royal Highness the Duke of York will open the Summer Show of the Royal Horticultural Society in the Temple Gardens, London, on May 23rd. Special schedules for the Show will be ready in a few days.

— **M. MAURICE DE VILMORIN.**—A complimentary dinner was given to this gentleman at the Horticultural Club, Hotel Windsor, on Tuesday night, the Rev. W. Wilks, Secretary of the Royal Horticultural Society, presiding on the occasion.

— WE regret to announce the DEATH OF MR. HENRY WEBB, who was for many years Treasurer and a member of Council of the Royal Horticultural Society. He died at his residence, Redstone Manor House, Redhill, Surrey, on the 24th inst. Mr. Webb enjoyed good health to the last, and was at the time of his death eighty-five years of age.

— **DEATH OF MR. H. EVERSHERD.**—We regret to hear of the death on the 10th inst., at Forest Hill, of Mr. Henry Eversherd, a well-known writer on agriculture in various journals and agricultural editor of "The Field." Mr. Eversherd, whose estimable character endeared him to all who knew him, was also of an archaeological turn of mind.

— **DEVON AND EXETER GARDENERS' ASSOCIATION.**—An exhibition of spring flowers was held as an experiment recently under the auspices of the above Association and proved a success. The exhibits were varied, of good quality, and were admirably arranged under the superintendence of Messrs. Andrew Hope and T. E. Bartlett, Honorary Secretaries of the Association.

— **DEATH OF MR. JOSEPH WHITTAKER.**—From a Derbyshire paper we learn that on Tuesday, March 13th, this remarkable man was laid to rest in Morley churchyard. As a botanist Mr. Whittaker's fame spread all through the country, and he had wonderful knowledge of flowers. Some years ago as many as 1300 different species of plants were said to be growing in his garden at Morley.

— **THE WINTER MOTH LARVA.**—It may be of interest to fruit growers that the first larva of this pest appeared at Glewston Court, Ross on 21st inst. Judging from the eggs deposited on the trees, the attack will not be so severe as last year. Fruit trees of all descriptions are covered with bloom buds, in fact if there were less bloom the fruit prospects would be improved, as such a mass of fruit buds is not always followed by a good set of fruit.—S. T. WRIGHT.

— **RED-LEADING SEEDS.**—About fifty years ago a correspondence on protecting seeds was carried on in a gardening paper edited by the late Mr. Robert Marnock. At that time I had to provide Cabbage plants on a large scale to supply the farmers on an estate. Before sowing round seeds I made others wet, then mixed the seed with powdered red lead pure, not adulterated. This proved a great success, upon which I wrote in Mr. Marnock's paper, and he gave me a leading article backing up my experience, he knowing me personally. The red lead must be pure.—GEORGE TABER.

— **TADCASTER PAXTON SOCIETY.**—On Thursday in last week an interesting lecture was read by Mr. J. Hornby, gardener to Lord Deramore, Heslington Hall, York, "On Climbing Plants, their Uses and Effects," before the members of the Tadcaster Paxton Society. The second annual meeting of the Society was also held a few evenings ago to elect officers for the ensuing year. Mr. H. Barret was re-elected Chairman, having previously filled the office both worthily and efficiently, being himself a fervent lover of gardening. Owing to the Society being in good condition financially, 1 guinea was unanimously voted to the Royal Gardeners' Orphan Fund, which will be handed over in the course of a day or two to Mr. Clayton, Grimston, Hon. Local Secretary. One guinea was also voted to a charity in Tadcaster.

— **CHEMICAL MANURES.**—The American Chemical Society estimates that the world's annual consumption of chemical manures at 5,500,000 tons, of which Great Britain is estimated to use nearly one-fifth. The estimate can only be regarded as approximate, and with reference to the estimated consumption of 1,000,000 tons in the United Kingdom, it may be mentioned that, according to the returns published by the Agricultural Department of this country, that the average annual importation of chemical manures in the three years immediately preceding 1892 was 600,176 tons. Of course large quantities are made annually at home from the waste products of gas and chemical works, and from bones and coprolites. During February there was a large increase in the imports of chemical manure, more particularly nitrate of soda and guano.

— **LILY OF THE VALLEY.**—The remarks made by "C." (page 221) call to my mind having once seen, some ten years ago, large breadths of Lily of the Valley growing and blooming most luxuriantly in the King's Woods near Leeds Castle, Hollingbourne, Kent. These plants form, indeed, a most pleasing and refreshing sight, the air round about being laden with their delicate perfume.—H. T. M.

— **A CLEVER SPIDER.**—Professor Lloyd Morgan, of University College, Bristol, recently sent to "Nature" this interesting anecdote: "Sitting by a little clear pool in the granite of Glen Sannox, in the island of Arran, last summer, I noticed a spider whose web was spun in the Heather which partly overhung the stream. On disturbing her, she dropped on to the granite a few inches above the water, and, running rapidly down, entered the pool and hid under a tuft of weed. After remaining thus hidden for two and a half minutes, she returned to the surface and, reeling herself up by her thread, regained the web. Disturbed again, she repeated the action, remaining under water one and three-quarter minute. A puff of tobacco smoke sent her down a third time, when she remained hidden for two and a quarter minutes. In each case she hid in the same place, and in each case regained the nest by her thread."

— **GREAT AUTUMN FRUIT EXHIBITION.**—We are authoritatively informed that the Council of the Royal Horticultural Society have had it in contemplation (with the sanction and co-operation of the Directors of the Crystal Palace) to take up and revive the great Autumn Fruit Show, which the Directors of the Palace used to hold, but which for the two last years they have discontinued. The Council of the Society have agreed with the Directors on the basis of the Society holding the Show, the Directors placing the Palace at their disposal and contributing £100 towards the prizes. The total cost of the Show will be £300. The Council will contribute £100, and are prepared to go forward with the matter if the nurserymen on the one side, and amateurs on the other, interested in fruit culture are willing to provide the remaining £100. If by the time the Council next meet this £100 shall have been promised the Show will be held, but if not it will be abandoned. Messrs. Bunyard & Co., Cheal & Sons, J. Fraser, Hurst & Son, Laing & Sons, G. Paul & Son, G. W. Prall, Pearson & Sons, Spooner & Sons, C. Turner, and J. Watkins have offered donations. Other offers towards this fund should be sent at once to the Secretary R.H.S., 117, Victoria Street, S.W.

— **A PLEA FOR THE PRIMROSES.**—"A Lover of Nature" writes to the "Times":—"May I crave space at this season for a few lines on behalf of the Primroses? These beautiful flowers are rapidly disappearing from our landscape. Throughout the season they are the prey of the professional root-grubber, and twice they are specially attacked—last week for church decoration, and next month as political emblems. Even in country districts forty miles from London they are fast disappearing. A few days ago, in an unfrequented part of Sussex, I was told that the diggers are constantly at work, prominent amongst them being the emissaries of a religious organisation. May I appeal through your columns to those who could do so much to check this sad destruction of our choicest wild flowers? The politician does less harm, for in another month Primroses for buttonholes can easily be obtained without much injury to the roots; but now, when the flowers are scanty and the stems short, the plants are dragged up wholesale and left to die a lingering death in tins around the walls of gas-polluted churches."

— **DAFFODILS.**—Respecting Mr. Arnott's note on the behaviour of Daffodils after the dry season, my experience, limited to about twenty varieties, is not a happy one, and I look along my narrow border with many sad reflections and much disappointment. The contrast with the magnificent foliage and flowers of last season is to some extent painful. Many bulbs have produced thin weak foliage, and are flowerless. Notably is this the case with the varieties Maximus, Sir Watkin, Princeps, Ard Righ, and some of the incomparabilis section, of which Sir Watkin, the most looked for, is the most wretched. Countess of Annesley is fairly good, now March 22nd at its best. Emperor, Empress, Horsefieldi, and Grandis promise to be fairly good, but will apparently be inferior in the quality and quantity of last year's flowers. It is rather a surprise to me that they are fully as early as last year, as are also many spring flowers, accountable probably to the long rest, as the first half of March has been very ungenial. I hear from Straffan, Kildare, that the fine collection there is good, but early flowers have been crippled by frost. I should like to ask if the Narcissus family are partial to lime. In many places in Kildare princeps and Telemonius plenus are to be seen in quantity, growing *au naturel* on the lime-impregnated soil, but absent on the granite of this neighbourhood.—E. K., Dublin.

— **RULE OF THUMB GARDENING.**—The remarks of your correspondent "A. D.," page 203, and "C. P.," 221, are, I think, as applied to the practical gardeners of the present day, without any foundation in fact. It is all very well in a lecture to cottagers in the rector's back garden, with Hodge and Giles agape, or on a green baize covered table at the distribution of prizes at a cottagers' show, amidst the smiles and applause of those who wish to give their humble neighbours a lift by the way, to ignore all that the gardening press and practical gardeners have done for the spread of horticultural knowledge, but to hash up the same and serve it in the front ranks of British gardening is, to state the case mildly, not in good taste. I have known gardeners, past threescore and ten, anxious to pick up a new fact, the result of practical knowledge, that I think it a very good rule with prolific writers not to write nonsense for the reading of those who know the truth.—R. M.

— **WAKEFIELD PAXTON SOCIETY.**—At a recent meeting of the members of the above Society, Mr. J. W. D. Macpherson, B.A., one of the assistant masters at the Wakefield Grammar School, gave a very able and most interesting lecture, entitled "A Sketch of the History of Practical Botany." Mr. Macpherson pointed out many of the chief epochs in the history of practical botany, commencing with the earliest ages, and tracing the various events down to the present day. He said the Medes and Persians were the first to reduce botany to a science and to cultivate edible things. He spoke of the gardening operations by Greeks, Romans, Turks, Italians, Russians, Chinese and others, and whilst doing so he remarked that the early Christians strongly objected, for some reason or another, to flowers, but that is not so now, as flowers are greatly used in the decoration of places of worship. Since 1762 to the present time the English system of gardening had been general throughout the whole of the continent.

— **BOUGAINVILLEA GLABRA.**—I was pleased to see Mr. Garner's contribution on page 184, advocating this climber as being suitable for a greenhouse. Too many persons refrain from cultivating it through a mistaken notion that it can only be well grown in a stove and for exhibition purposes. I quite agree with your correspondent that for rich depth of colour there is no place so suitable for it as a greenhouse roof, and no method of growing it better than the spur system as adopted for Vines. The compost recommended is also a good one, but I would also add some good lime rubble. We have probably one of the oldest plants in the country, and which was some three years ago showing signs of distress by thin weakly wood and small flowers. This indicated that the roots were at fault, consequently they were almost laid bare, with the result that the greater portion in the soil were found in a very bad condition and almost fibreless, the only ones which were sustaining the plant being found clinging to a brick wall forming the outside of a cemented water tank, and had taken possession of every particle of mortar between the bricks. On finding this out a quantity of mortar rubble was mixed with a compost similar to that recommended by Mr. Garner, and the old plant is once more in admirable condition. Shading should be avoided.—R. P. R.

— **NEW PROCESS FOR MAKING CITRIC ACID.**—Dr. Carl Wehmer, a Hanoverian botanist, is said to have recently discovered that sugar solutions exposed to the action of certain microscopic fungi, the spores of which float in the atmosphere, become transformed into citric acid precisely identical with that extracted from the Lemon. The first experiments made to prepare citric acid artificially in this way are said to have given excellent results, 11 kilograms of sugar producing 6 kilograms of crystallised citric acid. The new process has already been patented in several countries, including Italy; and at the factory at Thann the distinguished chemist, Scheuren-Kestner, is now carrying on experiments with a view to applying the process on a large scale. Everything tends to show that this new process will assume great development, and will make it possible to supply the trade with citric acid at a much lower cost than that actually ruling, and will in all probability supersede in a few years the present method of producing Lemon juice and citrate of lime. Unmerchantable Lemons are turned to great account, in Sicily more particularly, by extracting the essence from the peel and by converting the juice into concentrated Lemon juice. Should this resource now be taken from the Sicilian Lemon grower, he will indeed sustain a heavy loss. While Florida and California Lemon growers will not be affected by this new discovery, should it ever prove all that is claimed for it, because their industry is still in its infancy, the question appears of sufficient interest to arrest attention. Some interesting correspondence on this subject appears in the current issue of the "Kew Bulletin."

— *SPHÆRALCEA ABUTILOIDES*.—This plant is worth growing for the greenhouse on account of its axillary racemes of rosy mauve Malva-like flowers, nearly 2 inches across, which are developed in February. According to Mr. Watson in the "Garden and Forest," it was introduced in 1725 from the Bahamas, but had long since disappeared from gardens, until re-introduced to Kew by Baron Eggers a few years ago. At Kew it is grown along with greenhouse Abutilons and forms a little plant 2 feet high, with silky green leaves. With a little management it can be had in flower at almost any time. *S. umbellata*, better known as *Malva umbellata*, is another useful old plant for the greenhouse, which, however, is rarely seen in gardens. A species, said to have been found by Nuttall on the banks of rivulets east of the Walla-Walla, in North-west America, and introduced to Kew in 1863, is not known to be in cultivation here, though its picture represents it as a handsome flowering shrub.

— *DOUBLE-SPATHED ARUMS*.—Many persons consider these as novelties, and in some gardens they are of rare occurrence, but here they are common, as we have had many perfectly double flowers of late years. Several times during the past winter we have had four such spathes out at once, and only a month or so ago we had one triple-spathed bloom, each spathe being fully developed, which is I believe unique, as I have never seen or heard of a similar bloom. The Arums here have been flowering constantly ever since early in November, 1892, each plant having from two to nine blooms on from that date to the present, and they give every promise of keeping on indefinitely. I think the cause of this continuous flowering is keeping the plants pot-bound, which acts as a check on the growth, and thus causes them to be very floriferous. All the year round weak liquid manure is given every time the plants need water.—S. T. WRIGHT, *Gleuston Court Gardens*.

— *TURKEY OAK IN SOUTH AFRICA*.—The introduction of the Turkey Oak, *Quercus Cerris*, into South Africa by means of annual supplies of acorns from the Royal Gardens, Kew, is now an accomplished fact. In 1886 Mr. D. E. Hutchins, Conservator of Forests in the Eastern Division, wrote that "Up to the present day, while the seeds of a great variety of valuable exotic timbers have been sown in the forest nurseries, we are still without *Q. Cerris*." This tree Mr. Hutchins recommended on account of its being "better adapted to the climate of the Cape than the common Oak, *Q. pedunculata*." Arrangements were consequently made for the annual collection and dispatch of the acorns of this Oak, ripened at Kew, to the Cape Colony, and altogether about thirty bushels have been forwarded. They were packed partly in casks in water and partly in boxes in moist cocoa-nut fibre refuse, the latter method proving most successful. All acorns soon lose their vitality if allowed to get dry, but if packed in moist soil or sawdust, or cocoa-nut fibre refuse, they may be sent long distances with safety. The last consignment of acorns to the Cape, says the "Kew Bulletin," consisted of ten bushels; they were packed in three boxes, and dispatched on October 17th last. According to a report just received one of the boxes became heated on the way and many of the acorns consequently perished, but the acorns in the other two boxes were sound and just beginning to sprout. The timber of the Turkey Oak is held in this country in little esteem.

— *ROYAL METEOROLOGICAL SOCIETY*.—The monthly meeting of this Society was held on Wednesday evening, the 21st inst., at the Institution of Civil Engineers, Westminster, Mr. R. Inwards, F.R.A.S. (President), in the chair. Mr. H. C. Kiddle and Mr. S. R. Lowcock, Assoc. M.Inst.C.E., were elected Fellows of the Society. Mr. W. H. Dines read a paper on the "Relation Between the Mean Quarterly Temperature and the Death Rate." The Registrar-General's quarterly returns for the whole of England since 1862 were taken by the author, and the number of deaths in each quarter expressed as a departure per thousand from that particular quarter's average; the value so obtained being placed side by side with the corresponding departure of the temperature at Greenwich from its mean value. The rate seems to be that a cold winter is unhealthy, and a mild winter healthy; and that a hot summer is always unhealthy, and a cold summer healthy. Mr. Dines also read a paper on the "Duration and Lateral Extent of Gusts of Wind, and the Measurements of their Intensity." From observations and experiments which he has made with his new anemometer, Mr. Dines is inclined to think that a gust seldom maintains its full force for more than one or two seconds; and also that the extreme velocity mostly occurs in lines which are roughly parallel to the direction of the wind. Mr. R. H. Scott, F.R.S., exhibited a diagram, showing some remarkable sudden changes of the barometer in the Hebrides on February 23rd,

1894, at 8 A.M. The reading at Stornoway was 29.39 inch, being a fall of 0.7 inch since the previous day, and at 6 P.M. the reading was 28.58 inch. From the trace of the self-recording aneroid it appears that the minimum (28.50 inch) occurred about 5.30 P.M., and that the fall during the half hour preceding the minimum was nearly 0.2 inch, the rise after the minimum being nearly as rapid. The other paper read was "On the Calculation of Photographic Cloud Measurements," by Dr. K. G. Olsson.

— *NEW ZEALAND CONTRIBUTIONS TO KEW MUSEUM*.—The Rev. W. Colenso, M.A., F.R.S., F.L.S., of Napier, New Zealand, to whom the museum of the Royal Gardens is indebted for many valuable contributions extending over a long series of years, has, the "Kew Bulletin" asserts, recently sent an interesting illustration of ancient Maori use in the form of a dish some 10 inches long and 8 inches broad, made of the bark of the Totara (*Podocarpus Totara*, A. Cunn.). The outer bark is partially scraped away and the remainder very evenly bent or curved into a boat-shaped form, the ends being folded and brought together, and neatly tied. These dishes were used by the Maoris for filling with water and placing in the tops of trees to entice pigeons who came to drink, when a spear, which had been previously arranged in the tree, was suddenly let loose, piercing and killing the bird. Mr. Colenso, in a paper on "Reminiscences of the Ancient Maoris," published in the "Transactions of the New Zealand Institute," vol. xxiv., 1891, p. 451, describing the use of these dishes says:—"I may here mention that I have seen these Totara bark dishes with water in them fixed high up on the big branches of trees in the woods in the Urewera country, having flax nooses so set over the water as to catch and hold fast the pigeon in its drinking. I have seen Pigeons so caught, the Maoris climbing the trees naked with the agility of monkeys to secure their prizes." Another contribution to the Kew collection, made by Mr. Colenso, is a belt made of the long orange-yellow leaves of the Pingao (*Dromoschænus spiralis*, Hook. f.), a spreading, seaside cyperaceous plant, which is said to be extremely strong and durable. This is also referred to at p. 465 of Mr. Colenso's paper before mentioned.

— *BIRMINGHAM BRANCH OF THE GARDENERS' ROYAL BENEVOLENT INSTITUTION*.—A special meeting of the Birmingham and Midland Counties Gardeners' Mutual Improvement Association was held last week for the purpose of establishing a local branch of the Gardeners' Royal Benevolent Institution. Mr. W. B. Latham presided, and there was a large attendance. Mr. H. J. Veitch, Treasurer; Mr. G. J. Ingram, Secretary; and Mr. Vallance, as representing the Bath and Bristol Branch of the Institution, addressed the meeting. Professor Hillhouse and Messrs. J. Pope, Spinks, and Hughes were also present. Mr. Veitch, referring to the great advantages offered to gardeners, nurserymen, market gardeners, and their widows by joining the Benevolent Institution, said that since the Institution was founded they had distributed £61,000 in pensions. To become a life member the gardener had to contribute a guinea a year for fifteen years, or ten guineas down. Life members if incapacitated for work on reaching the age of sixty, and not receiving an income of over £30 per annum, were entitled to a pension of £20 per year, and the widow of a subscriber to £16 per annum. The Institution's liabilities now amounted to £2700 per annum. This year they wanted to raise about £13,000, and so be enabled to increase the number of pensioners. Mr. Ingram also spoke of the advantages of the Institution, and Mr. Vallance gave an outline of the work done in the Bath and Bristol district. After some discussion, Mr. Pope moved, "That steps be taken to form a branch of the Gardeners' Royal Benevolent Institution in Birmingham." This was seconded by Mr. Spinks, and carried unanimously.

HARDY FLOWERS FOR EXHIBITING.

IN your issue of February 22nd (page 152) Mr. J. A. Williams gave a list of hardy plants for exhibition at and from the last week in June. Would he, for the benefit of your readers who are not "amateur champions," ask those who kindly supplied him with their opinions as to which were the best varieties to grow, and what is their relative worth as to each other for exhibition in the matter of points? In other words could he get out a similar list to those given of Roses showing which count the most? For this purpose it must be assumed that the bunches are of equal merit as to colour and size of flower.

Further, could Mr. Williams help the uninitiated in the matter of manures for hardy flowers, stating which are generally most beneficial, having regard to the different soils and aspects, and at what stages of growth they are best given, and whether in liquid form or otherwise?—INQUIRER.



NEWLY IMPORTED ORCHIDS.

OWING to the increased facilities for transit and improved modes of collecting and packing, imported Orchids now arrive in this country in much better condition than formerly; still there are often many plants in a consignment that are not worth the trouble of taking from the sale room, and it behoves those who are buying to be careful in their selection.

Plants of pseudo-bulbous Orchids will frequently be found to have started into growth on the passage, and are to be seen with pale sickly looking shoots, which soon die when the plants are brought to the light, and in consequence back breaks have to be depended on, while sometimes the plants die outright. Those that are chosen should have fairly good sound bulbs, and what is of still greater importance plump though dormant eyes, which, when introduced to heat and moisture, grow away without any check.

Aërides, *Saccolabiums*, *Vandas*, and those of a similar habit, *Cypripediums*, *Masdevallias*, and others not bearing pseudo-bulbs, should have healthy leaves, firm, and sound at the axils if they are expected to do well. The first thing needful when the plants arrive is a thorough and very careful cleansing of all parts, and all dead leaves, bulbs, and roots should be cut clean away. Perform this latter operation judiciously, as much that at first sight looks useless will often produce growths that tend to make a plant well furnished, and it is better to leave a doubtful bulb to be afterwards removed than to cut away a sound eye. When all are cleared they may be spread out on a slightly moist stage, or suspended head downwards from the roof in an Orchid house, a moist stove, or a warm vinery, and lightly dewed with tepid water from the syringe or a fine-rose can once or twice daily. After a week or two of this treatment the plants will generally be showing some signs of activity by pushing new roots or growths, and it will be necessary to place the plants on blocks in baskets or in pots according to the requirements of the different species.

Erect-growing Orchids, such as *Dendrobium aureum*, *D. chrysotoxum*, *D. thyrsiflorum*, *Cattleyas*, *Lycastes*, *Brassias*, and *Oncidium*s should be placed in pots filled nearly to the rim with clean crocks, merely surfaced over with the usual compost, and supported with a few small stakes. Those with long pendulous bulbs, as *D. Devonianum*, *D. Pierardi*, and *D. macrophyllum*, will be more easily fixed in position if wired to small blocks, and these inserted in pots or wood baskets with just sufficient compost to hide the blocks. Distichous-leaved Orchids, such as *Phalænopsis*, *Vandas*, and *Angræcums*, are best potted in clean crocks, a little live sphagnum moss being mixed with them towards the top, while plants intended for blocks may be fixed in the usual way, either with copper wire and tacks, or strips of cork, or both as is most convenient.

The present is a very suitable time for procuring newly imported plants, as they have the summer before them to recover, and it will greatly assist the growth of all cool house Orchids if during the first year after being imported they are given a temperature of from 10° to 15° higher than that usually recommended for established plants.—H. R. R.

DENDROBIUM PHALÆNOPSIS SCHRÖDERIANUM.

A CORRESPONDENT writing to an American contemporary gives his experience of this beautiful Orchid as follows:—"Established plants generally flower in the dull autumn months and are very useful then, but those now in bloom were obtained last June as dried imported plants, and consequently started late. They all grew well, and every plant is now showing flowers. There is a wide range of colour in the plants already flowered, some being dark and others pure white, with rose shadings over the petals and lip. The paler forms are certainly the more pleasing, and seem to predominate. When this *Dendrobium* becomes fully established and makes a growth equal to that of the imported plants, we shall be surprised at the number of flowers to each spray.

"Full exposure to the sun in winter is necessary to mature the growth, especially where this has been made late, and also a position in the warmest house, with a minimum of 60° at night. It is essentially a warm-house plant. Even when in bloom it does not do to move the plants to a cooler temperature, as the flowers soon spot and quickly decay from damp. Another point worth noting is that a very small portion of potting material is sufficient about the roots, at least until the plants become well established.

We place them in shallow pans with holes in the sides, and suspend them close to the roof glass. Thrips and red spider are very partial to the young shoots, but in the growing season frequent spraying will keep these pests in check and benefit the plants also."

EARL'S COURT EXHIBITIONS AND PRIZE MONEY.

IT is announced that from May to October an Exhibition of British Industries will be held at Earl's Court. Additional attractions in the shape of flower shows on an extensive scale will be arranged during June and September. The principal object of the Exhibition is to illustrate as far as possible the industries of Great Britain, with special reference to the advance made in methods of production and in new inventions during the past few years. A special feature will be made of the various industries which can be shown in actual operation. Fine art exhibits will have a large section allotted to them, and the gardens will be improved and beautified. The buildings will be lighted by electricity, and the grounds will be illuminated. The exhibits will be divided into seven sections—manufactures, mechanical engineering, machinery and electricity, agricultural, mining and metallurgy, science, and fine arts. We are informed that the management will not be the same as last year.

FOR the benefit of those exhibitors at last year's series of shows who now apply for their duly won prize money, I would mention a case recently tried in one of the Hampshire county courts, which seems to run pretty much on all fours with the Earl's Court case. An exhibitor of dogs at a canine society's show won prizes to the value of £2 10s. Being unable to obtain the money he sued leading members of the committee and the secretary. The Court non-suited him as against the committee, but gave a verdict against the secretary for the sum named with costs. If the county court judgment as shown above be good law, then it would seem as if the Earl's Court exhibitors had an equally good case against the chief officials of those shows. Can it be possible, as so freely stated, that it is intended to organise another series of flower shows at Earl's Court this year? Though these will be under different management they must be prejudiced by last year's experience unless clear and definite undertakings are announced for the prompt and undoubted payment of the prize money.—A.

JUST a line to say that I received by the last post this evening (March 27th) my cheque for prize money, &c., due from the Earl's Court Exhibition of last year. Medals are announced to follow. Very many thanks for your valuable help in publishing letters concerning this business. We are all indebted to you.—JAMES HUDSON.

[Having endeavoured to do justice to the Earl's Court Shows we tried to do the same to a body of men who contributed so effectively to them, and it was not possible to conceive that the successful exhibitors would be eventually met otherwise than in an honourable manner. The deferred payment of prize money is not peculiar to the Exhibitions in question, and greater promptitude in other directions is from every point of view desirable. Mr. Hudson's announcement will give general satisfaction. We do not feel quite at liberty at present to state the precise nature of the settlement of this question.]

ROYAL HORTICULTURAL SOCIETY.

MARCH 27TH.

THERE was a bright display of flowers at the Drill Hall, Westminster, on the above-mentioned occasion. Stove and greenhouse plants were well represented, the same applying to Orchids and hardy flowers, including *Narcissi*. Some good vegetables were also exhibited.

FRUIT COMMITTEE.—Present: P. Crowley, Esq. (in the chair), and Dr. Hogg, with Messrs. G. Bunyard, A. H. Pearson, T. F. Rivers, J. Cheal, G. Taber, T. J. Saltmarsh, A. Dean, A. J. Laing, T. Glen, J. Hudson, G. Woodward, G. Wythes, F. Q. Lane, G. Sage, H. Balderson, and J. Wright.

At this season of the year the duties of the Fruit and Vegetable Committee are always light, and the present occasion was no exception to the rule. Only two dishes of seedling Apples were sent, one by Mr. Bourne, Beckenham, the fruits resembling Wyken Pippin externally, but in texture different, and not nearly so good as the old favourite; the other by Messrs. Jarman & Co., Chard, a variety raised from the Blenheim Pippin, and closely resembling Rymer, on which variety it was no improvement. No special award was merited in either of these cases.

In the vegetable department, Mr. G. Wythes, Syon House Gardens, had a great field day; but first we may notice the exhibit of Mr. W.

Shephard of Wallop, Hants. This was a new "Salad Kale." He had sown seeds of the Kale which he exhibited in pots, and the young plants were ready for cutting like Mustard—used, in fact, in the same way as young Rape plants. There is nothing new about the variety of Kale, a

duced—thirty-two varieties of vegetables, quite an imposing array, containing many excellent dishes, including Leeks, Parsnips, Ellam's Early and Veitch's Early Cabbage, Purple and Lily White Seakale, Asparagus, Beet, Mushrooms, Cucumbers, Albert Victor Potatoes



FIG. 40.—BEAUMONTIA GRANDIFLORA. (See page 244.)

plant of which was sent; it is, in fact, very old and useful, the Green Buda Kale, sometimes sold as Chou de Milan. The new "Salad Kale" was not considered either a novelty or possessing any special value.

Mr. Wythes arranged the best exhibit of the kind he has yet pro-

(excellent), Kidney Beans, Penzance, Veitch's Early Spring and Sprouting Broccoli, Read's Hearting, Scotch Curled, also Cottagers' Kale, Lettuce, and Coleworts. A silver Knightian medal was unanimously recommended.

FLORAL COMMITTEE.—Present: W. Marshall, Esq. (in the chair); Rev. H. H. D'Ombraim, Messrs. J. Fraser, O. Thomas, J. Laing, H. Herbst, R. Dean, G. Stevens, C. F. Bause, J. Jennings, B. B. Lowe, C. Jeffries, T. Godfrey, J. D. Pawle, C. E. Shea, T. Baines, H. Turner, G. Gordon, and G. Paul.

A handsome collection of Cyclamens was staged by the St. George's Nursery Co., Hanwell, W. The plants were splendidly grown, and a great diversity of colour was represented (silver-gilt Flora medal). Messrs. Paul & Son, The Old Nurseries, Cheshunt, had a group of hardy flowering shrubs, prominent in which were *Forsythia intermedia* (award of merit), *F. Fortunei*, *F. suspensa*, *Prunus myrobalana plena*, *P. Pissardi*, *Ribes carnea grandiflora*, *Genista præcox*, *Andromeda formosa*, *Magnolia stellata plena*, *Pyrus japonica rosea*, and Lilacs (silver Banksian medal). The same firm also showed Roses Miniature and Crimson Rambler; *Amaryllis Minerva*, Star of India, Ida Greenwood, Novelty (award of merit, see below), and *Picturata*; *Cannas* Golden Star and Comet. From the Royal Gardens, Kew, came a splendid collection of cut flowers from hardy trees and shrubs. Amongst the most noticeable were *Rhododendrons*, *Magnolia conspicua*, *M. stellata*, *Pieris floribunda*, *Pyrus Maulei*, *Clematis balearica*, *Erica mediterranea*, *C. codonodes*, *Prunus* in great variety, *Spiræa Thunbergi*, *Daphne Mezereum*, *Ribes aureum*, and *Spiræa prunifolia*. Mr. Allen, Gunton Park Gardens, Norwich, sent blooms of the brightly coloured Aldborough Anemones. Flowers of Carnations La Villette and Dodo were exhibited by E. Domaille, Esq., La Colombelle, Guernsey. G. F. Wilson, Esq., Weybridge, showed blooms of blue Primroses, many of the shades amongst which were very intense. A variety named Elizabeth Brodie was adjudged an award of merit.

Messrs. Jas. Veitch & Sons, Royal Exotic Nursery, Chelsea, staged a small but interesting collection of hardy flowering shrubs, comprising *Magnolia stellata*, *Corylopsis spicata*, *Andromeda speciosa cassinaefolia*, and *Rhododendron Schlippenbachii*. Plants of *Tetratheca ericoides* in splendid condition were shown by Messrs. Wm. Balchin & Son, Hassocks Nurseries, Sussex. Mr. R. Dean, Ranelagh Road, Ealing, exhibited a group of Primroses, amongst which were noticed some very charming colours. Very beautiful was Queen of the Whites, which received an award of merit (silver Banksian medal). A first-class certificate was awarded to the St. George's Nursery Co. for a plant of *Asparagus plumosus Sanderi*, which will be found described below. Messrs. J. Laing & Sons, Forest Hill, exhibited some splendid *Clivias*, amongst which were noticed Mrs. Laing, Stanstead Beauty, Sulphurea, Salmonea, Mrs. Broome, Magnet, Lord Wolverton, and Harry Laing (silver Banksian medal). A collection of *Amaryllises* was staged by Messrs. B. S. Williams & Son, Upper Holloway. *Ladaz*, Lady Dorrington, Dr. Masters, *Ophelia*, Emperor Frederick, Distinction, and Lord Salisbury were amongst the best. A first-class certificate was given to Mr. J. Fitt, gardener to Earl Cowper, Panshanger, Hertford, for grand pieces of *Beaumontia grandiflora superba* (see below). Messrs. Veitch and Sons showed *Caladium Gaspard Crayer* (award of merit), *Amaryllis Olympia* (award of merit), *Anthurium Scherzerianum atro-purpureum* (first-class certificate, see below), *A. S. delicatum*, and varieties of *Rothschildianum* were also noticed. Messrs. P. Barr & Sons, King Street, Covent Garden, arranged a charming collection of Daffodils. Emperor, Horsfieldi, Sir Watkin, Henry Irving, and numerous others were well represented (silver Flora medal).

In the class for a collection of Daffodils the Rev. S. E. Bourne, Dunstan Vicarage, Lincoln, was first with a charming exhibit. Empress, Maximus, Sir Watkin, Countess of Annesley, Telamonius plenus, Ard Righ, Incomparabilis, Queen Bess, and Leeds were amongst the best. W. J. Grant, Esq., Bassaleg, Newport, Mon., was second with a smaller but choice selection. Golden Spur, Sir Watkin, Henry Irving, Princeps, Wm. Goldring, Horsfieldi, Obvallaris, Minnie Hume, Princess Mary, triandrus calathinus, Mrs. C. J. Backhouse, Glory of Leiden, Emperor, and Barri conspicuus were particularly prominent. The stiff stereotyped market style of arrangement was departed from in this exhibit. Mrs. Fortescue Tynte, Tullow, Co. Carlow, was placed third. Messrs. J. Veitch & Sons staged a collection of seedling Narcissi, amongst which were some very charming varieties. The Rev. G. H. Engleheart, Applebaw, Andover, staged a group of hybrid Narcissi. One of the type of Obvallaris was of great excellence, as also was a white, the result of a cross between pallidus præcox and cernuus. Some forms, crosses between white and yellow varieties, were very fine, as also were numerous others in this exhibit. G. H. Cammell, Esq., Heathersall, Sheffield, showed a seedling bloom from cernuus of much beauty and substance.

ORCHID COMMITTEE.—H. J. Veitch, Esq. (in the chair); Dr. Masters, Messrs. J. O'Brien, H. M. Pollett, F. Mason, W. Protheroe, W. H. White, H. J. Chapman, E. Hill, S. Courtauld, T. B. Haywood, J. Douglas, and H. Ballantine.

Messrs. F. Sander & Co., St. Albans, contributed a fine group of Orchids tastefully arranged. Conspicuous amongst these were *Odontoglossum elegans Sander's var.* (award of merit), *O. Edwardi*, *Spathoglottis aurea*, *Cypripedium Elliottianum*, *Pbalius Sanderianus*, *Cœlogyne Dayana*, and some fine blooms of *Lycaste Skinneri* (silver Flora medal). Messrs. B. S. Williams & Son, Upper Holloway, sent a collection comprising some well-grown plants of *Cœlogyne cristata alba*, *Cypripedium Morganæ*, *Lycaste plana*, *Vanda tricolor superba*, and *Angræcum modestum* (silver Banksian medal). Messrs. W. L. Lewis & Co., Southgate, had a small group, amongst which were *Vanda tricolor*, Lewis's var., *Cattleya Schröderæ*, *Dendrobium Wardianum Lowi*, and *Odontoglossum Halli* (bronze Banksian medal). W. Thompson, Esq., Walton Grange, Stone (gardener, Mr. Stevens), staged a number of

Odontoglossums and *Dendrobiums*, the most attractive of which were *O. sceptrum waltonense* (award of merit) and *D. Wardianum purpurescens*. W. C. Walker, Esq., Percy Lodge, Winchmore Hill (gardener, Mr. Cragg), staged a fine piece of *Cbysis bractescens* growing on a block of wood (first-class certificate).

Messrs. J. Veitch & Sons sent a few Orchids, including *Calanthe striata*, *Phalænopsis F. L. Ames*, *Epidendrum Endresio-Wallisi*, *Cypripedium Adrastus*, and *Dendrobium Euryalus* (first-class certificate). Baron Schröter, The Dell, Egham (gardener, Mr. Ballantine), staged some splendid spikes of *Odontoglossums* and a few plants of the attractive *Lælia vitellinum* (silver Flora medal). Messrs. Hugh Low & Co., Clapton Nursery, exhibited some plants of *Miltonia vexillaria* and a small *Cypripedium* named G. Gurney Fowler, the result of a cross between *C. Godfroyæ* and *C. barbatum*. R. F. Measures, Esq., Cambridge Lodge, Camberwell, sent cut blooms of *Vanda tricolor*, including some splendid forms. Sir Trevor Lawrence, Bart., Burford Lodge, Dorking (grower, Mr. W. H. White), contributed some choice *Dendrobiums* and other Orchids. Botanical certificates were awarded for *Eria æridostachya* and *Maxillaria Lawrenceana*, and a first-class certificate for *Dendrobium superbum Huttoni* (silver Flora medal). Sir John Edwards, Thamesfield, Henley-on-Thames (gardener, Mr. Hatch), exhibited a large plant of *Cypripedium caudatum*, for which a cultural commendation was awarded.

CERTIFICATES AND AWARDS OF MERIT.

Amaryllis Novelty (Paul & Son).—A charming variety with medium sized flowers of a novel colour. The segments are rich rosy mauve striped white (award of merit).

Amaryllis Olympia (J. Veitch & Sons).—A magnificent variety with rich crimson segments. The plant exhibited bore two scapes each carrying three fine flowers (award of merit).

Anthurium Scherzerianum atro-purpureum (J. Veitch & Sons).—This variety has a rich crimson spathe of medium size, the margin being shaded purple (first-class certificate).

Asparagus plumosus Sanderi (St. George's Nursery Co.).—An exceedingly graceful plant, the foliage being more finely cut than that of *A. plumosus nanus* (first-class certificate).

Beaumontia grandiflora superba (Mr. J. Fitt, Panshanger).—This is a beautiful shrubby plant for a warm conservatory. The flowers are large, white, green at the base, and trumpet shape. Is this not the same as *Beaumontia grandiflora* (fig. 40, page 243) which was exhibited in April, 1886, at a meeting of the Royal Horticultural Society by Mr. Ruffet, then of Panshanger Gardens, Hertford? On that occasion also a first-class certificate was awarded by the Floral Committee (first-class certificate).

Caladium Gaspard Crayer (J. Veitch & Sons).—The leaves of this variety are medium-sized, green, blotched, and veined red (award of merit).

Cbysis bractescens (W. C. Walker, Esq.).—A fine piece of this curious Orchid was exhibited. The sepals and petals are white, the inside of the lip being yellow, tinged red (first-class certificate).

Dendrobium Euryalus (J. Veitch & Sons).—This is the result of a cross between *D. nobile* and *D. Ainsworthi*, and in habit bears some resemblance to the first-named parent. The sepals and petals are bright rosy mauve, as is the front lobe of the lip. The throat is a rich dark crimson, with a distinct white margin (first-class certificate).

Dendrobium superbum Huttoni (Sir Trevor Lawrence).—A good form with pure white sepals and petals, the front portion of lip being also white, the throat purplish crimson (first-class certificate).

Forsythia intermedia (Paul & Son).—An early flowering shrub; large yellow flowers (award of merit).

Odontoglossum elegans, Sander's var. (F. Sander & Co.).—This is an excellent variety. The sepals and petals are lemon yellow, heavily blotched with brown (award of merit).

Odontoglossum sceptrum waltonense (W. Thompson, Esq.).—A splendid form, sepals and petals heavily blotched with reddish brown (award of merit).

Primrose Elizabeth Brodie (G. F. Wilson, Esq.).—A rich purple coloured variety, flower large, with bright yellow eye (award of merit).

Primrose Queen of the Whites (R. Dean).—A useful variety, bearing flowers of a creamy white shade (award of merit).

THE RARE TREES AND SHRUBS IN THE ARNOLD ARBORETUM:

At the afternoon meeting of the Royal Horticultural Society on Tuesday last an essay on "The Rare Trees and Shrubs in the Arnold Arboretum, United States," by Mons. Maurice de Vilmorin, of Paris, was read by the Rev. W. Wilks. Mons. de Vilmorin was present, and under the chairmanship of Dr. Masters there was a fair audience.

In opening his subject the essayist remarked that the Arboretum, comprising some 175 acres, was situated about six miles south-west of Boston. It was, he said, of historical interest, being the gift of Mr. Arnold, and contained one of the finest collections of trees and shrubs in the world. The ground had for the most part been trenched, and was undulated, the various slopes facing different aspects, being planted with trees and shrubs that needed special positions. The summers in that locality are hot, but not so dry as in other States, though cold in winter, the temperature frequently falling to 10° below zero. From this it will be gathered that all the trees and shrubs in the Arnold Arboretum are quite hardy, and may be grown in most parts of Europe. So far as possible the various genera are arranged in botanical order, and such as *Kalmias* and other dwarf shrubs, which spring up spontaneously

as undergrowth, are encouraged to thrive, these serving to prevent drought during the summer. The specimens, in most cases, are planted in groups of from five to ten, one plant of each kind being allowed sufficient space to develop properly. Many of the trees, although not long planted, are 20 feet high, but the Conifers as yet have not made much growth. In the private grounds of Professor Sargent, as well as other places in the district, the essayist remarked that he had seen some splendid trees during his visit in June and July of last year.

Among the many species of rare trees and shrubs which Mons. de Vilmorin referred to in his excellent paper were the Magnolias. These, he said, are as yet only to be seen in the grounds of the botanical school connected with the Arboretum, but there is a very fine collection. *M. parviflora*, a new kind from Japan, grows well at Boston grafted on a stock of *M. acuminata* and flowers profusely every year. *Clematis paniculata* planted against a south wall also blossoms freely in August and September, and this he thought would prove a suitable climber for the south of England. *Berberis Thunbergi* and others are grown extensively, and he was surprised to see the *Stuartias* flourishing, because he was not acquainted with a single successful grower of these in France. The Maples, Vines, and *Ilex* are well represented, the small black fruits of *Ilex glabra* being very interesting. *Wistarias* and *Sumachs* are favourite plants, the first named being grown as standards several feet in height. Specimens of *Prunus pendula* and *P. pumila* form beautiful objects when in bloom, as do the many species of *Roses*, *Spiræas*, *Pyrus*, *Weigelas*, and *Lilacs* that are cultivated. *Styrax japonica* he noticed does well, whereas near Paris it would not thrive, and the *Rhododendrons* are very distinct. In some private grounds near he observed a singular *Walnut*, which Professor Sargent considered a natural hybrid between *Juglans nigra* and an American species.

Dr. Masters remarked, that Mons. de Vilmorin's paper, whilst being full of interest and giving every satisfaction, brought feelings of regret that once the R.H.S. had an arboretum as fine as that at Arnold. It was gratifying to know, however, that a splendid arboretum existed at Kew. Mr. Nicholson briefly alluded to his recent visit to the United States, observing that *Prunus pendula* was one of the floral treasures of the world.

Votes of thanks to Mons. M. de Vilmorin for his essay, and Sir John D. Llewelyn, Bart. for kindly sending some *Rhododendrons*, concluded the proceedings.



RUGBY AND DISTRICT CHRYSANTHEMUM SOCIETY.

WE are informed that the eighth annual exhibition of the Rugby and District Chrysanthemum Society will be held in the Town Hall, Rugby, on November 14th and 15th. Liberal prizes are offered, and a good display will, no doubt, be forthcoming. Mr. W. Bryant, 8, Barby Road, Rugby, is the Secretary.

M. FRANÇOIS DÉLAUX AND MADAME SIMON DÉLAUX.

CHRYSANTHEMUM growers will join with us the feelings of regret with which we record the death of M. François Délaux of Toulouse, which took place on the 3rd inst. M. François Délaux was in his 80th year, and was the father of M. Simon Délaux, the well-known French Chrysanthemum raiser. We understand that this sad event has proved doubly disastrous to M. Simon Délaux, for on the 10th inst. the wife of the latter suddenly fell down dead. Madame Délaux for twenty years past assisted her husband in his great Chrysanthemum work.

PROMISED NOVELTIES IN CHRYSANTHEMUMS.

MUCH of the present popularity of our favourite flower depends upon the ever-varying form, colour, and new departures which it makes almost every season. Scarcely a year goes by without something unexpected turns up, and as long as this continuous uncertainty and frequent surprises are maintained the Chrysanthemum will retain its hold upon popular esteem. In looking over the new catalogues of seedlings for the current year I notice Louis Lacroix promises us a new *Anemone* of a velvety blood-red colour, a variety which if it answers its description would materially help to brighten the show-boards in that class. So many of these, especially the Japanese *Anemones*, were of the rosy lilac, or undecided mauve tints, that it was a positive relief when Sabine, M. Charles Lebocqz, M. Pankoucke, appeared upon the scene. There is plenty of room for some good crimson *Anemones*. M. Bouchardat, who has not sent out anything of surpassing excellence since 1888, when he gave us *Etoile de Lyon*, *Geo. Daniels*, and *Condor*, announces the distribution of several gigantic varieties, *Aug. Pelissier*, *Madame Gindre* and *Cardinal Vaughan* being those most worthy perhaps of being looked out for next autumn.

Amongst M. Ernest Calvat's seedlings, which most of our introducers will be sure to have, *Le Colosse Grenoblois* is an enormous flower. Those who saw the bloom he staged at one of the N.C.S. floral meetings will be anxious to see it when grown by capable English cultivators and without coarseness. For mere size there is nothing like it, the colour is a rosy white striped lilac, and a note should be made of it

by those on the *qui vive* for large show flowers. *Madame Carnot*, a large white Japanese from the same raiser, is also promising.—P.

STOPPING CHRYSANTHEMUM FOR TIMING THE BLOOMS.

NO one values more than I do the useful information elucidated by discussing knotty points of culture. Many diverse opinions have lately been given on this subject which will, without doubt, be productive of much good, and I fully believe there is a great deal to be learned in the matter of "timing the buds" by practising a judicious system of stopping, and by rooting the cuttings at intervals, but it is quite a new idea to me that the latter is a more haphazard way of bringing about the desired result than the former.

Even Mr. Fergusson (page 206) makes no attempt to prove the point, but is satisfied with making the assertion. All known methods of "timing" Chrysanthemum buds are to a certain extent haphazard, because the erratic variations of seasons affect the plants so much, and I think will always do so, no matter what system is practised. I have tried the plan of stopping with several varieties during the last five years, but find it by no means so reliable as Mr. Fergusson maintains. During some seasons it answers well enough, in others the desired result is not attained. Chrysanthemum growers in the north are, I believe, quite independent of terminal buds. Not so with growers in the south, for this reason. They may manage to get their crown buds at the right time, but in consequence of a spell of hot weather in September find their flowers come so rough or deformed as to make them useless for exhibition purposes.

The best and most successful growers in the south each year stage many good terminal flowers, for the simple reason that they often find it impossible to obtain deep solid blooms from crown buds. The great depth to be found in terminal flowers from really strong plants caused them to be fancied rather than despised. Stopping may answer very well in some localities and seasons, but I venture to advise growers not to be too hasty in adopting the plan largely till they have proved how it will stand the test of different seasons.—H. DUNKIN.

A NATIONAL FRUIT CULTURE SOCIETY.

MR. RIVERS' proposal, page 220, of the formation of a National Pomological Society may be good or otherwise, but the proposed title is objectionable, not one tithe of the public would understand the appellation or comprehend its objects. If we could have a "National Society for the Promotion of Fruit Culture," or "A Society for the Promotion of Fruit Culture in Great Britain and Ireland," everybody would, in either case, understand what its objects were, and the *raison d'être* of its existence. All the same, do not let it be forgotten that some previous efforts in the same direction have not proved successes. We had the "Fruit Growers' Association," I think it was named, but it has collapsed. There was another body that had about it a strong flavour of Covent Garden, and was thought to have a membership of one man. That, too, seems to have collapsed; and were our judgment to be guided by these examples, we should say that Mr. Rivers' proposal is bound to fail, even if for a time realised, either because such a society really be not wanted, or else because it fails to find pecuniary support.

Obviously the proper Society for the promotion of fruit culture in Great Britain should be the R.H.S., but it by no means rises to the occasion, although it may plead that it does its best. The great difficulty in the way of any new society is the getting of funds to carry on whatsoever of work they have to do. We have of horticultural societies now a myriad, and their maintenance becomes a heavy burthen to those who wish to see them useful. Many of these exist more for the pecuniary benefit of exhibitors than any other very useful purpose, and, presumably, no society could exist a year even without holding a competitive exhibition of the particular produce it favoured. To organise these exhibitions and pay the prizes at once swallows up nearly all the resources of these societies, and no other tangible benefits follow. I think it is nearly time subscribers to all sorts of societies did ask themselves whether some other results from their subscriptions might not be looked for than the mere benefiting of exhibitors.

Coming back to fruit, however, the suggestion which comes from Mr. Rivers reads oddly in face of the intimation you give that the R.H.S. is proposing to hold a great fruit show at the Crystal Palace in the autumn. Here is evidence that the old Society is desirous of doing something for the promotion of British fruit culture, even though it be but a competitive exhibition. But then could any national society do much more? There have been fruit conferences at the Palace. The R.H.S. could surely organise one at the same place again next autumn if the said show should take place. Could a national society do much more? But what does Mr. Rivers mean by a national society being soon formed into a Royal society? Does he mean that it should be incorporated by Royal charter, and be hampered as the R.H.S. is with its charter? That seems absurd. Not 10,000 Royal charters can galvanise into life a society that has no national life, or fails to secure popular support. National Chrysanthemum, Rose, and other special societies cover very limited areas and subjects after all, but a national or British society for the culture of fruit or improving it must have very wide and great aims. The work would not have to be seen in mere exhibitions, but in thousands of unpretentious ways, and it would need not only a huge membership but a large income to enable it to do useful work. Neither of these is probable. The public pocket is now strained to the very uttermost. Meritorious objects are failing for lack of monetary support, and it would in such case be folly further to add pecuniary burthens.—A. D.



CLASHING OF ROSE SHOWS.

REFERRING to my recent remarks on a remedy for these unfortunate occurrences, and "D., Deal's" reply and criticism on my statements, I would now call attention to the "Times" of March 23rd, page 10, wherein there is an article on "The Coming Cricket Season." A list of the best matches alone are given, those from May to August, mostly arranged under the supervision of the M.C.C. The list is of 264 separate events. Of these 103 are classed and specified in capital letters by the "Sportsman" as "first-class matches," the others being public school and county matches. Our Rose fixtures, so far, amount to twenty-five in all. I would call attention to these comparative figures as a further proof of the absurdity of "D., Deal's" argument, and his erroneous statement of figures in support thereof. The fact is we do not, as a society, try to avert the evil of clashing; as it is nobody's business in particular, we shut our eyes, let the whole subject remain as an annual annoyance, and trust to chance to bring matters right. In no other class of amusement do the authorities who are supposed to preside allow matters to shape their own course.

NATIONAL ROSE SOCIETY—THE HARKNESS SILVER CUP.

I have much pleasure in informing you that Messrs. Harkness and Son, of Bedale, Yorkshire, have most generously offered a silver cup, value 25 guineas, for competition at the N.R.S. metropolitan Show, Crystal Palace, this year and in following years. The cup is given to growers of under 1000 exhibition Roses, is to be competed for in a class for twelve varieties, is to be won thrice (not consecutively) before becoming the property of the winner, and is to be called the "Harkness challenge cup." I may mention that, in addition to this cup being the handsomest prize ever given by an individual or firm to the National Rose Society, it is also a new departure, in its being the first important recognition of the smaller growers, who constitute the mainstay of our Society's finances. It should give a decided impetus to the smaller growers, and I trust may be another source of encouragement to them to persevere in Rose growing and exhibiting. I am certain that the members will cordially join me in acknowledging the generosity which has prompted the great Yorkshire firm to give such a splendid gift to our Society.—CHARLES J. GRAHAME.

[The spirited action of Messrs. Harkness and their splendid gift cannot fail to gladden the hearts of existing amateurs who cannot devote acres of ground to Roses, while it is bound to increase the number of growers and stimulate them to adopt the best means in their power for the highest possible development of the Rose. Bravo! Yorkshire.]

PROSPECTS OF THE COMING SEASON.

NEVER in my recollection have our Roses shown better promise than at present. From correspondents in various parts of the country I hear a similar report, and unless we get a sharp frost from now up to the end of May there is every prospect of a most successful break into new growth. At one time, during the opening of this year, the extra severe weather threatened to do considerable injury. Not only was it colder than usual, but the frost was accompanied by a most searching east and north wind. Thanks, however, to the excellent ripening of last autumn, almost all the wood has come through the ordeal unscathed.

We have three important periods in the culture of Roses—a good growth and thorough ripening, exemption from severe winter injury, and freedom from sharp spring frosts after new growth has commenced. Satisfaction as regards one or two of these is of no use whatever without the third. We have realised the two former fairly well, and now all depends upon the present spring and early summer. After the experience of 1893 it is well to add early summer, for the excessive heat and drought had quite as much to do with the general failure of that year as the two or three sharp frosts of late spring. It is the May and early June frosts which do so much injury to young growth. With exemption from these, we are almost certain of a good Rose season.

I have now almost completed my pruning, and find the wood of all varieties and classes in an exceptionally sound condition when I bear in mind their exposure to a frost ranging between 20° and 32°. Teas and Noisettes have stood the test remarkably well, and again proved how hardy the bulk of these grand classes are. Ma Capucin, Madame Cusin, Madame de Watteville, Niphetos, and La Boule d'Or were the most injured in the former class; Céline Forestier, Maréchal Niel, Narcisse, and Solfaterre faring worst among the Noisettes. I did not notice any injury among the Hybrid Perpetuals except to a few of the notoriously tender kinds.

It is always cheering to be able to look forward to a successful season among one's favourite flower, and the prospects for 1894 are remarkably good as far as established plants are concerned.

When we turn to the buds which were inserted during the previous summer the outlook is not so satisfactory. Many of them are black and dead. Some of this is no doubt due to the drought and excessive heat, the little sap there was being dried up much more than usual. We also

had some difficulty in inserting the early summer buds, as the bark lifted worse than I have noticed for many years. Those which were budded later, after the few early autumn showers, have taken much better, and thanks to the mild weather at the close of the year set in a most satisfactory manner.

Maiden dwarfs upon the Manetti are pushing strongly and forward, while those on the seedling and hedge Briar are only swelling. Of the two I prefer the appearance of the latter at present, but it is much too early yet for any definite forecast of the coming Rose season. At present we can only rejoice in having got over the results of an exceptionally unfavourable summer, and we look for some little compensation for the disappointments of 1893.—PRACTICE.

CLIVIAS AT FOREST HILL.

It would be impossible at any season of the year to go to Messrs. J. Laing & Sons' Nurseries at Forest Hill without seeing something which tends at once to instruct and to interest. The name of Laing is renowned in the Begonia world, for has not the respected head of the firm, Mr. John Laing, striven for years to place these plants on the high pinnacle of excellence and popularity that they now enjoy? And what able assistants and co-workers he has in his two sons. Then see to what a state of perfection the Caladium has been brought, and here again let credit be given where it is undoubtedly due, for assuredly this firm has done its share, and perhaps more in this advancement. A third instance of the firm's enterprise and perceptive powers in recognising a flower which must become popular may be found in the Clivia, or as they were once called, and doubtless still are by many persons, Imantophyllums, but the former is correct, and certainly the easiest to write and speak, so to that let us cleave.

The advance that has been made of late years is really marvellous. The Clivia of to-day is a truly handsome plant, carrying symmetrical trusses of flowers and having rich dark green strap-shaped leaves, some of which are erect while others possess a graceful pendulous habit, which sets off the flowers admirably. The individual blooms are large and shapely, forming at the head of a stout stalk a cluster of from thirty to forty. After the flowers have gone the grower can watch the development of the seed pods, which are somewhat slow in reaching maturity, taking rather more than twelve months; these eventually turn crimson scarlet in colour, and form an additional attraction to an already beautiful plant. The colouration of the flowers is not yet very greatly diversified, ranging in various shades of orange red, but these are of that exquisite softness to which justice can rarely be done in writing. A few will, however, be mentioned and described as well as possible, and to all, whether satisfied or not, the advice is tendered to make the journey to Laing's and see for themselves, and the sooner they find the opportunity to do so the better, for they are sure to derive satisfaction from the visit.

A variety which at once claims attention owing to the intensity of the colour is Harry Laing. The flowers are large, and the truss on the young plant noticed was of medium size; the colour is a bright orange scarlet, the effect of which is much accentuated by the pale yellowish white throat. It is an acquisition, of which more will be heard later when a stock of plants has been secured. In direct contrast to the former is the much older Sulphurea, which is, as its name would lead one to suppose, a pale sulphur yellow of a peculiar soft and pleasing shade. Mrs. Laing bears handsome trusses of orange-red flowers, the throat of which is lemon in colour. Another variety of great merit is Lord Rosebery, the sepals and petals of which are broad, and of a deep orange-red shade. The blooms are excellent in form, and the truss is one of the most compact. Patrick Davidson has flowers of the same colour as the foregoing, but they are longer, and the divisions are very much narrower and pointed, the truss being of great size. Lord Wolverton is one of the finest. The blooms are very large, very deep orange-red in colour, and with a yellow throat. It is unquestionably a variety with a future. Stanstead Beauty has long, narrow petals and sepals, the colour of which is bright orange-red, with a yellow and white throat. Many other varieties of equal merit could be mentioned, but these must suffice; let readers go and judge for themselves.

The culture of Clivias is simple, a greenhouse temperature being admirably suited to their requirements. If flowers are desired early they may be had with the aid of bottom heat, and the display where a number of plants are grown may be much prolonged. A compost of loam, leaf mould, and silver sand should be provided, and during the summer months abundance of water must be supplied; while just as the flower spikes appear an occasional watering with liquid manure is usually followed by the most beneficial results. They are said to stand a great amount of neglect, so those amateurs who have little time to devote to their greenhouse would do well to procure a few Clivias to afford them flowers during the months of spring.—H. J.

TABERNÆMONTANAS.

TABERNÆMONTANA coronaria flore-pleno is a beautiful evergreen flowering shrub which at one time most deservedly occupied a very prominent position amongst stove plants. It does not, however, appear to be so much appreciated at the present time as its merits deserve. In habit and character it is very similar to the much-prized Gardenia. Its

flowers, which are freely produced from the forks of the branches of from ten to twelve in a cluster, are pure white and very fragrant. Having been very successful in the cultivation of this plant I will relate my experience, trusting it may be of interest to the readers of the Journal.

Cuttings of half-ripened wood may be inserted any time during the spring or summer, but I much prefer the spring. Two or three cuttings may be placed in a 60-size pot, afterwards plunging in a good bottom heat. When rooted the young plants must be removed from the frame and gradually inured to air, afterwards placing them singly in small pots. Use a compost of good lumpy loam and fibry peat in equal proportions, one-third partly decayed leaf soil with a little dried cow manure, and a fair portion of sharp silver sand. Before the roots become much restricted for room the plants should have liberal shifts as becomes requisite, for on no account must they be allowed to become root-bound or they will quickly present a stunted appearance. The process of watering must be very judiciously performed till the roots have taken full possession of the soil, after which water may be applied with greater freedom. Where practicable I recommend a stock of young plants to be raised every two or three years, as by this method much better flowers are produced than it is possible to obtain from older plants.

Having so far dealt with the cultivation of young plants I will now make a few remarks in reference to old ones; for although, as before mentioned, the flowers are not so large as on younger plants, they are nevertheless produced in much greater numbers, thereby making them indispensable where a large supply has to be maintained. Plants that are too large for general requirements should be kept rather dry for two or three days after flowering, after which they may be pruned back to the old wood. No fear need be entertained in reference to over-pruning, as I know of no hardwooded plant that recovers itself after severe pruning more readily than the *Tabernæmontana*. The plants should be liberally syringed two or three times a day till the young growths appear, at which stage it will be necessary to repot them. Remove some of the old soil from the ball, afterwards placing the plants in the same sized pot as it was previously in, using a compost similar to that above recommended.

There are other kinds of *Tabernæmontanas*, one of the best being *T. cymosa flore pleno*, which is represented in the illustration (fig. 41). This variety, it appears, was originally obtained from a Belgian garden, and by some growers is considered superior to the double *T. coronaria*. It is occasionally offered in trade catalogues as *T. camassa*, and is said to be more profuse in blooming than the first-mentioned and generally grown form.

Tabernæmontanas are subject at all stages of their growth to the attacks of various insect pests, mealy bug being especially troublesome. A sharp watch must, therefore, be kept, and upon their first appearance immediate steps should be taken to insure their removal, for if once this pest is allowed to become thoroughly established it will be found very difficult to eradicate it. One of the best insecticides that I have found for the removal of mealy bug is petroleum. This should be used in proportion of a wineglassful to 3 gallons of water, the whole being thoroughly mixed by filling the syringe two or three times, and returning its contents back into the can, repeating this operation at about every six or eight syringefuls. If this is performed, say, once a fortnight, and the plants syringed twice a day with clean water, it would do much towards preventing the attacks of insects, and at the same time be very beneficial to the growth of the plant.—G. PARRANT.

REPORT OF OBSERVATIONS OF INJURIOUS INSECTS.

MISS ELEANOR A. ORMEROD'S seventeenth report has reference to insects and common farm pests during the year 1893, with methods of prevention and remedy.

As representing the importance of the work of this accomplished lady and indefatigable worker, it may be stated that during last year (1893) she "received inquiries regarding about (or upwards of) 145 distinct species of infestation." Of these, twenty-eight subjects are treated in a very plain, yet scientific and elaborate way, so that there is no difficulty in understanding the nature of the attack, nor making any mistake in applying the preventives or remedies.

The report opens with a startling illustration—excellent engravings of the male, female, and caterpillar of the lappet moth, *Gastropacha quercifolia*, Linn., "all from life." Although the caterpillar is hardly so

fearful in appearance as the figurative dragon the mythic St. George is said to have vanquished, it is dreadful enough to strike terror into the hearts of fruit growers; but, fortunately, it is "only here and there they have attacked our young trees." This is consolatory, for so large an animal as this is figured and the ravages it commits—"every vestige of leaf eaten"—may well make cultivators quake in their shoes. Fancy "caterpillars of . . . a length of from 4 or 5 inches" feasting and fattening on our Apple and other fruit trees. One thing is certain, there cannot be any excuse for allowing trees to be devoured by the monster, as it is easily seen, and the application of 5-inch pruning nippers across its middle will make speedy work of it and similar pests, which are not pleasant to handle. Miss Ormerod suggests collecting and selling the caterpillars to entomologists or naturalists. This reminds me that the offering of 1s. each for caterpillars of the death's head moth in a newspaper led to the trampling of Potato fields by boys, and, later, to digging up the Potatoes.

Our old friend the collier or Bean aphid was "unusually prevalent during the hot and dry season of 1893," and no wonder, for farmers allow it to foster on Ragged Robin and docks in their field hedge sides,



FIG. 41.—TABERNÆMONTANA CYMOSA FLORE PLENO.

and then are amazed whence the black louse on the Beans comes from. Miss Ormerod advises cutting off the tops of the infested Bean plants in good time; old and excellent advice, good alike in field and garden.

Gout fly attack on corn and grass crops is next alluded to, and it was "worse on those plots which were deficiently manured, while on those plots which were fully manured, that is, received all the necessary constituents for healthy and vigorous plant growth, the injury done was insignificant." This shows that good cultivation aids crops against their insect as well as their fungal enemies. Little grain moth receives a generous share of attention, also the haystack moth, hessian fly—which does not appear to gain much hold in this country, mainly through Miss Ormerod's efforts in diffusing knowledge and means of contending with its attacks since 1887.

"Rose chafers have caused serious mischief in many localities during the past season." Attention is drawn to the fact that they are the parents of the grubs that presently ruin the adjacent lawns and meadows by preying on the roots of the grass. The authoress rightly observes that "twenty-one grubs or somewhat more to a foot square of ground . . . would be somewhere about one grub to every 2½ inches of grass roots, and the results are necessarily serious." Reference is made to the value of starlings and of fowls in this connection, also rooks. The old-fashioned drenching of the ground with gas liquor as a cure for ground insects, and cockchafer grubs in particular, is also mentioned. It is an excellent remedy, as I have proved. In one place we used the gas liquor from the works, where gas was made for lighting the mansion on the park land, diluted with four times its bulk of water, distributing it with a liquid manure cart, and it made the grass grow famously, while neither starlings nor rooks worked that part of the land as they did that where it had not been used. It browned the grass a little, killed the moss, and a luxuriant crop of grass followed.

At last—the Gooseberry and Ivy red spider has been named. Why *Bryobia prætiosa* instead of *B. speciosa*? This changing of names is tantalising. But are the Ivy and Gooseberry red spider the same species? Surely there is a difference between the Ivy red spider (*B. speciosa*), Gooseberry red spider (*B. prætiosa*), and Clover red spider (*B. pratensis*), or is the difference mere variation due to the host? Alteration in colour has a great deal to do with that of aphides on different host plants, and this change has given rise to species! Anyway, the confusion of names by scientists does not give cultivators confidence in their nomenclature. The names change, but the insects remain the same. They cannot be one thing at one time, something else at another, except the egg, larvæ, pupa, insect. But however much scientists may differ, cultivators will find the usual mixture of softsoap and sulphur, or of softsoap and petroleum, complete remedies for any of the red spider race. They are better and safer than Paris green or any poisonous mixture.

Gooseberry and Currant scale (*Lecanium ribis*, *Fitch*) is a decided hit—natural and well-executed figure of an old pest, hitherto without a clear definite identification. I have compared Miss Ormerod's figures with living specimens (March 14th), and find them singularly accurate. Nothing kills these scaly pests better than compounds of softsoap and petroleum, nor prevents their attacks more decisively, as the creeping scale will not fix on a branch which has been recently coated with a petroleum emulsion.

The next chapter is on a beneficial insect, feeding on red spider. Though I yield to no one in admitting the usefulness of the insects preying on the destructive of their class, I do not see how they are to be protected, for I find that what will kill aphides destroys the larvæ of ladybirds feeding upon them; indeed, it is better not to have one of either in a garden for the aphides mean ruin to the growths they infest, and the ladybirds are perfect pests when fruit is ripening, for they have a sweet tooth—like ants, earwigs, and woodlice. Miss Ormerod justly alludes to the matter of preserving friendly insects as one of "fancy;" and one of her correspondents clenches the argument—"the wash we used was more successful in killing the larvæ which prey on red spider than the spiders themselves."

Locusts (presumably imported) were sent to Miss Ormerod in 1893 from two different localities in this country, and alive. I also have a specimen locust (!) captured on Vines, yet it is not a foreign, but native species—*Tetrix campestris*. The "report" gives figures and particulars of the Egyptian and American locusts, so that we are "forewarned" against, and shall know how to contend with an invasion by these devouring hosts should they make an attempt on our shores.

Surface caterpillars (larvæ of hart and dart moth) have not been inactive in 1893, but injured Turnips, Potatoes, and Mangolds more or less, chiefly in the south of England, yet it has been known to be a serious trouble in places much further north—to wit, Yorkshire.

Slugworms receive particular attention. "The damage done by these ugly brutes to fruit trees is very often immense; especially is this the case during dry seasons. They are found on most species of *Pyrus*, *Prunus*, *Cerasus*, *Rubus*, and *Amygdalus*, as well as *Cratægus*, *Quercus*, and *Betula*."—(*Cameron*). Dusting the trees affected with quicklime soon settles these pests.

In the next chapter, on pages 84-95, a mine of information on gall mites is sprung—rather several mines—from Vienna, America, and various places in this country. There is an excellent figure of the Pear-leaf gall mite (*Phytoptus pyri*) and an infested Pear leaf. The mite is at least one-third longer than any I have seen in England. This shows how mites are affected by environment. "Sexually developed mites move about nimbly on the under side of the leaves. They are found throughout the whole year, from May onwards of various ages, and have many broods, so that multiplication continues uninterruptedly until the wintery season. They disperse themselves, both as larvæ and developed mites, in the leaf and flower buds of the one-year-old twigs, embedded in the felt-like layer of hairs on the inside of the outer bud scales."—(*Dr. E. L. Taschenberg*, page 88.)

Plum-leaf funnel-shaped galls, *Phytoptus similis*, *Nalepa*. This is lamentable, as everybody knew it as *P. pruni*, *Am*. The technical description aids little—surely farmers and gardeners are not expected to be acquainted with continental languages. The Black Currant bud gall, *P. ribis*, *Westwood*, is next referred to—allusion made to the "minute gold coloured round bodies or drops . . . recently brought forward and figured (in this country) as a form of gall caused by the same gall mite that forms the distorted bud gall. This I believe to be wholly inaccurate." The gold coloured round bodies are shown in the Board of Agriculture Report on Insects and Fungi Injurious to Crops, 1892, plate vii, fig. 2, in colours, and are a faithful representation. I also gave illustrations of the blackening of Black Currant shoots and leaves by mites in the *Journal of Horticulture*, July 6th, 1893, page 11, which I submit are strictly accurate—all from life. Miss Ormerod admits they are "fluid drops." If not "little globules of moisture" caused by mites, what are they the result of? And how comes it that these gold coloured bodies are only found on growths infested with *Phytopti*?

Daddy longlegs or crane fly larvæ infesting Strawberry plants is ably treated on pages 95-98. The leather-jackets "commence their work of destruction by severing the leaf stems from the roots immediately below the ground (why plant so deeply?) thus killing off large numbers of otherwise healthy plants." Rape cake is mentioned as a remedy.

The dreaded root-knot eelworm infesting Tomato and Cucumber roots next receives liberal treatment (pages 99-108), and is very interesting

and disheartening. Experiments with such substances as "magnesium sulphate, iron sulphate, tartaric acid, lead acetate, citric acid, sodium sulphite, sodium hyposulphite, sodium caustic, potassium sulphite, potassium permanganate, potassium chloride, potassium ferrocyanide, potassium sulphide, potassium sulphate, potassium caustic, potassium acetate, carbolic acid, and potassium cyanide," at the rate of 1, 2, 3, and 4 grammes to each pot were unsatisfactory, carbolic acid giving best results. "Gaslime (fresh) up to 20 grammes, fresh caustic lime up to 20 grammes, tobacco powder up to 8 grammes," were equally ineffectual in killing the pests.

"The plants in the potassium ferrocyanide were all killed, even the plant to which I only used 1 gramme to the 4½ lbs. (of soil). The plants in the gaslime were sickly at 12 grammes; but the eelworm was not even checked with 20 grammes. All the other plants did well, and were not injured in the least. The only things effectual in checking the eelworm were carbolic acid and potassium cyanide, when 4 grammes to the 4½ lbs. of soil were used. In these pots only the smallest trace of eelworm could be found, whereas the pots in which the other chemicals were used were a mass of knotted roots." This is a very valuable record and is worth ten times the cost of the Report (1s. 6d.). The only thing recommended is carbolic acid—33 ozs. to 15 cubic feet of soil, the acid being mixed with water to the extent of twenty times its bulk and then used, a water pot with a fine rose, thoroughly mixing the soil afterwards.

The "report" is replete with particulars of the experiments, and it will be noticed that no substance used as manure had any effect on the eelworm. This is an unfortunate feature in the case, there is a still worse—the sterilising of the soil by destroying the micro-organisms, to which it mainly owes its natural fertility. Carbolic acid is one of the most powerful disinfectants, a great microbe killer, and it is one of the best things for killing weeds on walks, yet poisons never ought to be used for such purposes where there are dogs or cats, as they get it on their fur.

Diamondback moth caterpillars seem to have done very little damage to Turnips in 1893. This is made up for by the wasps, which opens in the Report with an engraving of the nest of tree wasp, after a sketch from an original specimen by Miss Ormerod, and the whole wasp family are capitally treated and illustrated on pages 111-140. Everybody will, or ought to know, all they need care to about wasps and hornets after reading the matter carefully and mastering the particulars.

Willows are not forgotten. There are particulars of the attacks of the caterpillars of small chocolate-tip moth on Osiers in Ireland, also "Peeble prominent" moth caterpillars. The caterpillar is a queer looking creature, a zigzag-formed thing when disturbed on Osiers, it putting itself in an attitude of defence. Willow sawfly closes the "seventeenth report," except a first-rate index, which is equally valuable with the whole, and quite equal to, if not better than, any of its predecessors. It is published by Simpkin, Marshall, Hamilton, Kent, and Co., Stationers' Hall Court, London.—G. ABBEY.



HARDY FRUIT GARDEN.

Grafting Fruit Trees.—The present time is the most suitable to carry on this operation, inasmuch as the sap is becoming active and powerful, which is of great importance in effecting a union of stock and scion.

Tongue or Whip Grafting.—This style is used when stocks are of small diameter, such as the headed-back branches of young trees which have proved to be inferior varieties, and upon which it is desired to work some approved sort. It is also a suitable style for working seedling stocks, being largely practised as a safe, easy, and effectual method.

Preparation of the Stocks.—As this method of grafting can only be used on small or comparatively small stocks, it is not necessary to cut the latter down before the workman is ready to operate. In young trees shorten the branches to within 2 feet of their origin, making a short, clean, sloping cut at a desirable part of the wood where the bark is smooth. Next make a slanting cut upwards in the wood of the stock at a length of about 3 inches. The formation of the tongue is effected by a sloping cut inwards, beginning about an inch below the top. This incision is met by a vertical one from the higher part of the first sloping cut, which will detach a thin wedge-shaped portion of wood. The stock is then ready for the reception of the scion.

Preparation of the Scions.—The scions having been selected of the same thickness as the stocks, must have a corresponding cut made downwards on one side, of exactly equal length to that upon the stocks. The scions should be healthy wood of last year's growth cut some time back to ensure their having, when used, quite dormant buds. The central parts of such shoots are usually the best, therefore cut off the unripe ends and the bottom portion. The length of each scion may be 6 or 8 inches of straight ripe wood, with bold wood buds. Some growths, however, are longer jointed than others, and as it is desirable

to secure a length of wood with four buds the shoots must be cut accordingly. Those which have been lengthened through being shaded or growing in crowded parts of a tree are unsuitable. Short-jointed wood ought to be secured if possible.

Crown or Rind Grafting.—This mode is adopted with large old trees which are headed down near to the main stems for the purpose of being worked with better varieties. Only healthy, vigorous-rooted trees ought to be grafted, as it is a waste of time to work feeble or diseased trees. It is difficult besides to operate on trees of the latter character, particularly if branches are cankered or rough.

Preparing the Stocks.—All branches over an inch or two in diameter are best worked on this method, because several grafts can be placed on one stock. It is usual to shorten large branches in the winter or some short time previous to the grafting period, not necessarily to the exact place where grafts are intended to be inserted, but near to that point, so that when the time actually arrives the stock needs no further preparation than a small slice of wood removing. The bark lifts freely near fresh cuts, because better supplied with sap in circulation. In this form of grafting cut the stocks transversely, leaving the wood and the edges of the bark very smooth. The slits in the bark for receiving the scions may be made perpendicularly, 2 inches in length, commencing at the top and cutting just through the bark.

Preparing the Scions.—The scions should be of the same character as regards ripeness and having dormant buds as for other forms of grafting. The previous year's wood is the best, being young, straight and easily manipulated. Make a slanting cut down one side, the same length from the base as the slit in the stock. At the upper point of the cut remove a small portion of wood inwards so as to form a seat for resting the scion securely upon the stock when inserted.

Uniting Stocks and Scions.—In all forms of grafting the greatest care is necessary in exactly joining the inner barks or albuminous tissue of stock and scion. It is through this important part of the wood known as the cambium layer that the sap chiefly circulates, therefore the exact juxtaposition of the living cells is needful in securing the proper adhesion and completing a permanent union. In some cases this exact joining cannot be effected on both sides, but, if possible, it should, in order that a truer and stronger cohesion may be accomplished. If impossible to join on both sides careful attention must be given to one side, or failure will result. In whip grafting it is not difficult when the stock and scion are each of equal size.

In crown grafting the joining is readily done, so long as the scion is not made too thin and the graft held in position. Gently raise the bark on each side of the slit with a hardwood or ivory wedge just enough to admit the scion, which carefully press down until seated on the stock. In one form of crown grafting the left side of the scion is slightly pared, and when inserted in the slit the prepared side exactly joins the edge of the cut in the stock, the bark not being lifted on that side at all, but on the opposite side it is raised to admit the scion easily.

Tying and Claying.—The next process is to firmly tie in the grafts with raffia grass, not too tightly, but so that the junction is not spoiled; then cover with grafting wax or a composition of clay and cow manure thoroughly mixed and worked into a plastic mass. The object is to exclude air and retain moisture. The latter acts well when it does not frequently crack and fall away. Should it do so the apertures must be quickly closed again. Grafting wax is usually preferred, though many adhere to the clay and manure.

FRUIT FORCING.

Peaches and Nectarines.—**Earliest Forced Houses.**—The very early varieties, such as Alexander, Waterloo, Early Beatrice, and Early Louise will soon give indications of ripening, when syringing must cease, and the leaves that shade the fruit be drawn aside, raising the fruit, if necessary, on laths placed across the wires of the trellis, so that its apex will be directly to the light. Do not hurry such varieties as Hale's Early, Stirling Castle, Royal George, and Dymond Peaches, or Early Rivers, Lord Napier and Elruge Nectarines during the stoning process, but continue the temperature at 60° to 65° at night, 70° to 75° by day with sun heat, and about 65° by day in dull weather, avoiding sudden fluctuations and depressions. Tie the shoots to the trellis as they advance, and regulate the growths for future bearing so as not to have them too crowded, as by giving the shoots ample room the fruit is better exposed to the sun and air, and the wood for another year is stouter and better ripened. Shoots disposed to grow more than 14 inches may have the points pinched off, but extensions should be trained in their full length. When the stoning process is over, which may be ascertained by testing a few fruits with a knife, the crop will require regulating for the final swelling. Very vigorous trees may be allowed to carry more than one fruit to each square foot of trellis, while weakly trees should not be permitted to bear so many. Supply liquid manure to weakly trees, the inside border in any case being kept properly watered, mulching the surface with a little well-decayed manure. This will secure uniform moisture and favour the surface roots.

Trees Started at the New Year.—The fruit should be thinned to few more than is required for the crop. Avoid sudden checks by judicious ventilation, cold air in the daytime and a high temperature at night proving fatal to the fruit stoning. A night temperature of 60° to 65°, 5° less on cold nights, and 65° by day in dull weather, with 70° to 75° from sun heat is quite sufficient.

Trees Started Early in February.—Syringe the trees occasionally in dull weather and twice daily in bright, but avoid heavy syringings,

especially late in the afternoon, as the water remaining long on the leaves interferes with their elaborating functions, and may destroy the tissues. Allow a night temperature of 55° to 60° in mild weather, ventilating from 65°, permitting an advance to 70° or 75° from sun heat, but with full ventilation. Attend to disbudding, and follow it up day by day until only the shoots required for future bearing or the extension of the trees are retained. A shoot must be left at the base of those now bearing, and another on a level with or above the fruit. If the latter is not required for extension it should be stopped at a few joints of growth. In the case of trees not full grown it will be necessary to leave shoots about 15 inches apart, calculating from the base of the last year's growth, to form the bearing shoots of next year, the terminals being trained in their full length as space permits. Avoid crowding the growths, as they then become weak and unfruitful. Commence thinning the fruit when they start swelling, removing the smallest first and those on the under side of the trellis, beginning with the weakest part of the trees, thinning proportionately more than on stronger wood, which from carrying more fruit will tend to equalise the vigour of the tree. Laying in the shoots requires to be done early and carefully, so as not to bring down the shoots too sharply, yet it is necessary for giving the right direction to the growths, and in securing the growths to the trellis space must be left for their swelling.

Trees Started in March.—While the trees are in blossom it is not desirable to syringe them, but a genial condition of the atmosphere may be secured by damping available surfaces in the morning and early afternoon. Prevent a vitiated atmosphere by providing a little air constantly through the top ventilators. Maintain the night temperature at 50°, falling 5° or more through the night in severe weather, 50° to 55° by day, and 65° from sun heat.

Latest Houses.—The blossoms being abundant, remove those on the under side of the shoots. Shake the trees daily from the first pollen ripening until the last of the blossom requires attention, selecting the early part of fine days when artificial impregnation is resorted to, and it is a good plan to dust every blossom, when the pollen is ripe, with a camel-hair brush, a feather, rabbit's tail mounted on a stick, or small plume of Pampas Grass. Any trees deficient of pollen should have it taken from those affording some plentifully, such as the small-flowered varieties, Royal George Peach and Elruge Nectarine. Maintain the temperature at 40° to 45° at night, 50° to 55° by day, in all cases accompanied by slight ventilation at the top of the house, which must be increased when the temperature reaches 50°, and full at 65°.

Unheated Houses.—The trees are coming into blossom. Ventilate the house at 50°, and do not permit an advance above 65° without full ventilation top and bottom, and close the house at 50° in mild weather, but when there is a prospect of frost at night close at 65°, leaving a little air to allow of moisture escaping. In mild weather leave the ventilators open constantly when the temperature exceeds 50°. Remove the blossoms on the under side of the shoots where there is a superabundance.

Melons.—The earliest plants will have fruits set or setting on the first laterals. A rather drier atmosphere and no more water than to prevent flagging, with an increase of temperature of about 5°, and a circulation of warm air, are desirable during the setting period. The flowers should be fertilised every day when fully expanded, pinching out the points of the shoots one or two joints beyond the fruit. When the fruits are set, and about the size of a Walnut, give the bed a thorough watering, and in a day or two add soil to the sides of the ridges or hillocks, pressing it firmly, and again supply water. Both the soil and water should be warmed to the temperature of the bed. Stop the subsequent growths to one or two joints, and prevent overcrowding by rubbing off shoots for which there is not room for the foliage to have full exposure to light. If the bottom heat be increased 5°, or to 85°, it will assist the swelling of the fruit. Do not overcrop the plants, but leave the fruit proportionate to the vigour—two on weakly, three or four on vigorous, and very strong plants may carry six fruits. The night temperature may be 70°, 75° by day, ventilating from that point, increasing to 85° or 90°, closing at 85° sufficiently early to increase to 90°, or 95° or 100°. Damp the house in the morning, syringe moderately by or before three o'clock on bright warm afternoons, damping available surfaces in the evening. Keep the evaporation troughs filled with liquid manure, failing these, sprinkle the floor occasionally in the evening with liquid manure. Plants in narrow beds will require plenty of liquid nourishment, always in advance of the mean temperature of the house, and top-dressings of rich material.

Successional Plants.—Train the growths regularly, remove every alternate lateral, rubbing them off directly they are perceived, the remainder being trained to the right and left of the main stem. Pinch out the points of the primary growths after they have extended two-thirds of the required distance. Increase the supply of moisture both at the roots and in the atmosphere as the days lengthen. Pot seedlings, shift into larger pots, and plant out as required. Sow more seeds to afford plants in proportion to the wants of individual establishments. In pits and frames a bottom heat of 80° should be secured to plants that are growing freely, renewing the linings as required. In newly made beds the bottom heat should be about 90°.

Cucumbers.—Shade will be necessary from bright sun, but it should only be used for a few hours at the hottest part of the day, and only sufficient to prevent flagging. Assist plants in full bearing with frequent applications of weak tepid liquid manure, and add fresh warmed soil to the beds occasionally. Plants in bearing for any great length of time should have the old exhausted soil removed with a small

fork, not injuring the roots, adding fresh lumpy compost previously warmed. Thin out the exhausted growths, and encourage fresh bearing shoots. Expel worms with lime or soot water, a peck to 30 gallons of water, stirred well, letting it stand forty-eight hours, then watering with the clear liquid. Subdue canker at the collar and in the old growths by rubbing quicklime into the affected parts. Damp the floor in the morning between seven and eight o'clock, and again in the afternoon about three o'clock, syringing the foliage gently on warm afternoons, and keep liquid manure in the evaporation troughs. Attend to stopping, thinning, and training at least once a week. Maintain a night temperature of 70° to 75°, by day 80° to 85° with sun, and close sufficiently early to rise to 90°, or even 100°, with an abundance of atmospheric moisture. Ventilate moderately and early, avoiding sudden changes of temperature, also currents of cold air, which cripple the foliage and cause the young fruit to become deformed, and to swell irregularly. Where straight fruit is required glasses should be employed.

Pits and Frames.—The requisite heat should be maintained by renewing the linings. Train the growths rather thinly, pegging them down as required, and stop one joint beyond the show for fruit, or the leading growths about 1 foot from the sides of the frame. Add fresh warmed soil to the ridges or hillocks as the roots extend. Be moderate in the application of water as the nights are as yet cold, and employ thick night coverings. Admit a little air early, so as to have the foliage dry before the sun acts powerfully upon it. The heat through the day may range from 80° to 90° with sun. Close early in the afternoon, no harm accruing if the temperature rise to 90°, or even 100° provided there is no rank steam. If there is danger from it admit a little air constantly, a small opening being sufficient to allow it to escape, as it is very light.

THE BEE-KEEPER.

APIARIAN NOTES.

THE WEATHER AND THE APIARY.

We are at the time of writing having fine weather—calm, with slight frosts at night and brilliant sunshine through the day. Bees have been busy, and judging from the numerous young bees and chance drones upon the wing they are evidently well advanced, so with a continuation of fine weather early swarms and surplus fruit tree honey may be expected. It is quite astonishing to see from the colour of the pollen the many different sources from which it is gathered in so short a time after prolonged stormy weather.

DISEASED BEES.

Several weeks since I mentioned a case of one of my hives being affected with chloric dropsical fever, and promised to let your readers know the result. Nearly all the bees bred in 1893 are dead, or fast dying. On looking over my register I find the mother of these bees was superseded by an introduced queen in the autumn—the reason it survives with a fair number of youthful bees bred since December. This verifies my opinion that the disease is hereditary, and probably incurable.

PREVENTING LOSS OF SWARMS.

Devices for preventing the loss of swarms are numerous, and some of them very old. In my early days I remember some of the different devices of placing empty hives above, below, in front, or at the side, the latter having communication either by a tunnel or being placed close to a side entrance. Whether any of these plans were successful or not I cannot say, but know it was admitted on all sides that combed hives were an attraction for decoying swarms, but that plan was considered illegal. I therefore never practised it beyond the experimental stage, proving the plan fairly reliable; hence the reason I advocated in these columns several years since, the plan of a cork or bark-covered box or barrel, having a hive of combs at the top, protected from the rain by a proper roof. The bees were able to get access to the hive through chinks in the bark and barrel. I justified the action of bee-keepers to this course as being part of their own apiary, and that the plan was open for any person to adopt, trusting a feeling of honour and honesty would prevail amongst those who employed the decoy. Instead of a hive containing combs a few pieces of combs attached to the side of barrel inside would be a legitimate method, and to make the plan more effectual all the dead queens should be laid inside the decoy. These attract great numbers of bees during the swarming season.

One of the latest devices for preventing the loss of swarms is the Langden. Some bee-keepers consider this a success; but so far as I can judge of it, whatever it may be in America where hives are generally small, I do not see any advantage that can

accrue from restricting bees to the extent it must do. The plan is to have two hives, a weak one and a strong one, side by side. A long box is placed close to the front of the two hives; it has a free doorway to each hive, and a hole above corresponding with one in each hive, upon which a cone escape or bee trap is fixed. When the strongest of the two hives is preparing to swarm its entrance is closed against all incoming bees, the outgoing ones getting exit through the cone escape. The incoming bees, finding the entrance of their hive closed, pass along the tunnel, or are supposed to do, where, according to the advocates of the plan, the bees will join the other colony peaceably, although under other circumstances precautions would have to be taken for their own and queen's safety. Supers are placed upon it which the stranger and recently admitted bees are expected to take possession of and fill. For many reasons, however, I consider the system objectionable.

The following plan, if bees from different colonies could be depended upon to fraternise with each other when shut out of their hive, might be more successful:—Two colonies standing near each other, occupying hives with moveable sides, might have a third empty hive of a similar construction placed closed and between the other two. A trap that would allow a dozen or more bees to escape at a time would be much better than a cone when the bees were shut out of their hive. They would enter readily the mid-chamber, which is separated from the mother hive by perforated zinc, through which the bees attending the brood might be fed, while supers would be filled overhead by the bees in the mid-chamber.—A LANARKSHIRE BEE-KEEPER.

GARDENERS' CHARITABLE AND PROVIDENT INSTITUTIONS.

THE GARDENERS' ROYAL BENEVOLENT INSTITUTION.—*Secretary*, Mr. G. J. Ingram, 50, Parliament Street, London, W.C.

UNITED HORTICULTURAL BENEFIT AND PROVIDENT SOCIETY.—*Secretary*, Mr. W. Collins, 9, Martindale Road, Balham, London, S.W.

ROYAL GARDENERS' ORPHAN FUND.—*Secretary*, Mr. A. F. Barron, Royal Horticultural Society's Gardens, Chiswick, London, W.



All correspondence should be directed either to "THE EDITOR" or to "THE PUBLISHER." Letters addressed to Dr. Hogg or members of the staff often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post, and we do not undertake to return rejected communications.

Pruning Filberts (*H. T. S.*).—Concise instructions on pruning Filberts as practised in Kent in the spring were published in our first issue of the present month, page 172. If after reading those instructions you desire further information, please specify on what points, and your letter shall have attention.

Disease on Souvenir de la Malmaison Carnations (*Tyke*).—The leaves are badly attacked by the rust fungus (*Uromyces caryophyllinus*), and it does not spare the young cuttings any more than the older plants. Probably the best treatment would be to destroy all affected plants, and disinfect the house with carbolic acid diluted with twenty times its bulk of water, applying with a fine-rose syringe, wetting every part of the house—walls, floors, and soil. You may also try syringing the plants with sulphide of potassium, half an ounce to a gallon of water, thoroughly wetting them on both sides of the foliage, but keep it from the roots as much as possible. The potassium sulphide will discolour paint, and the smell is not pleasant; but the plants can be removed from the house for treatment, returning them after it has been disinfected.

Winter Spinach Falling (*L. D.*).—The decaying and decayed parts of the stems are infested with eelworm (*Tylenchus obtusus*), which is shorter than *T. devastatrix*. There is nothing akin to *Gordius*

aquaticus in the Spinach root-stem. The plants should be pulled up and burned, removing the root portion, then give the land a dressing of quicklime as hot as possible, spreading it evenly on the surface. Point the ground over at once 2 or 3 inches deep and sprinkle more quicklime on this newly turned soil. A peck to each pole of ground (30½ square yards) is sufficient for each dressing, or half bushel per rod altogether. The ground may then be dug, preferably with a fork, a spit deep and occupied with something different to the previous crop, say Peas or Beans, and before sowing or planting apply a dressing of kainit, using 1½ lb. if the ground be rather heavy, and 2 lbs. per rod if it be light.

Planting Asparagus (J. S.).—The distance you propose—beds of four rows, 1 foot asunder, and the plants 1 foot apart in the rows—is much too close to secure fine heads. The rows should be at least 18 inches apart, and the plants 15 inches asunder in the rows, placing them in alternate order. It is not necessary to have alleys at 4 feet intervals, but it is desirable to divide the ground into convenient plats or squares for convenience of gathering and weeding—say, of about 30 yards, which can be done by omitting a row at the distance indicated, and providing 3 feet spaces crosswise, these being connected with the cartway. The plants should be placed astride a ridge formed by taking out a small trench on both sides of the line at an angle of about 45°, and if the sharp edge is rounded a good seat for the plant is secured, placing it so that the crown will be 2 to 3 inches below the general level. Spread the roots straight in the trenches, cover with soil, and make moderately firm, then place the soil over the crowns. The plants should not be more than two years old, for nothing is gained by planting older; indeed, good one year's plants are the best. The blanching is effected by placing soil from between the rows over the crowns in early spring, which is removed after the cutting is completed, leaving a depth of about 3 inches only. The very large heads seen in markets are the produce of plants planted in rows a yard apart, and 18 inches asunder in the rows, some allowing even more space.

Peach Buds Falling (H. H.).—There are various causes for Peaches and Nectarines casting their bloom buds. The evil sometimes arises from over-development of the buds, as in the case of trees that are subjected year after year to early forcing, to imperfect formation of the buds, due mostly to insufficient supplies of water and aliment, too much wood, or crowding, overcropping, and attacks of red spider. The buds often fall from a deficiency of moisture at the roots during the season of rest, but of all the causes the most fertile is that of undue excitement and its concomitant checks during the resting period. We do not think the buds falling is in your case due to the cold draughts through the house, but incline to the opinion that the trees have not been duly supplied with water and liquid manure during growth, and the foliage not kept free from insects, also that the trees are kept in too changeable an atmosphere, and too dry whilst at rest. Sometimes the buds fall through a careless application or an overdose of an insecticide. The only way to escape buds falling is to attend carefully to the cultural requirements of the trees. We have not lost any buds of consequence for many years by simply lifting trees that exhibited that tendency, lifting being, with otherwise good management, an almost certain preventive, and it is equally important that the trees be exposed to the full influence of the atmosphere by removing the roof lights so soon as the buds are formed and the leaves give indications of falling in the case of trees that do not ripen their fruit before August, but very early forced trees require the lights removed so as to prevent premature development of the buds. The removing of the roof lights insures a season of complete rest instead of the alternating fluctuations and depressions, which are often sudden, attending trees kept under a fixed roof. The above details you will do well to bear in mind next autumn.

Own-root Roses (H. G. M.).—The practice of growing Roses on their own roots has been advocated in these pages for very many years past, and we have not to thank the Americans for any information on the subject. Tea Roses are much the best for pot culture, those on their own roots suckering, branching, and flowering strongly and almost continuously. If cuttings were rooted this spring bushy plants in 8-inch or slightly larger pots might be grown ready for flowering next winter and spring. What are wanted are early cuttings. Those found most suitable are young shoots that have just given a bloom and others of the same age. These should be taken off with a heel and the tops shortened to the second or third leaf. Heel-less cuttings of firm young wood with two or even a single joint only are also suitable. Place them singly in thumb pots, plunge in brisk heat, and keep close, shaded, and steadily moist till rooted. From these small pots they should be early shifted into others 5 inches in diameter, and from these again into 8-inch pots. Use a mixture of two parts of loam to one part of leaf soil with sharp sand added freely for the cuttings, and the same proportion of yellow fibrous loam, more coarsely broken up loam, and adding leaf soil, some decayed manure, charcoal, and sand for the shifts. Plants to be kept growing in gentle heat and light position well away from hot-water pipes till July, when they may be either turned out in a sunny sheltered spot or placed in cold pits. All flower buds to be picked off as they form, and this will be all the stopping needed. It is not often possible to obtain Tea Rose cuttings from house-grown plants, and your best plan will be to purchase a few plants worked or otherwise, already well established in pots. If these are placed in gentle heat they will soon flower and give cuttings. Similar though much

later cuttings taken from bushes growing against sunny house or garden walls will root under hand-lights behind a north wall, but the plants thus obtained would not attain to a serviceable size the same season. Maréchal Niel can be raised as advised in the case of Teas, and if the plants are grown without stopping they will bloom freely during the following spring. Varieties of Teas frequently recommended for pot culture on their own roots are Alba rosea, Anna Olivier, Catherine Mermet, Comtesse de Nadaillac, Hon. Edith Gifford, Isabella Sprunt, Jean Ducher, Madame Falcot, Madame Lambard, Marie Van Houtte, Niphetos, Rubens, Safrano, Souvenir de Thérèse Levet, and The Bride. American growers plant their Roses in beds of good soil about 6 inches thick on benches in houses for flowering in winter, and we have heard the method is to be tried in this country. Very large blooms seem to be more valued in America than in England.

Names of Plants.—We only undertake to name species of plants, not varieties that have originated from seed and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in firm boxes. Slightly damp moss, soft green grass or leaves form the best packing, dry wool the worst. Not more than six specimens can be named at once, and the numbers should be visible without untying the ligatures, it being often difficult to separate them when the paper is damp. (F. J. W.).—Daphne Mezereum. (Jonas).—1 and 2, forms of Dendrobium nobile; 3, Dendrobium Wardianum; 4, Cattleya intermedia; 5, Maxillaria picta. The flowers were very badly packed.

COVENT GARDEN MARKET.—MARCH 28TH.

MARKET quiet, with a slack demand for house vegetables. Grapes gradually rising in value.

FRUIT.

	s.	d.	s.	d.		s.	d.	s.	d.	
Apples, per bushel	2	6	to	9	0	Lemons, case	10	0	to 15	0
„ Nova Scotia, per barrel	12	0	24	0	Peaches, per doz.	0	0	0	0	
Cobs	45	0	0	0	Plums, per half sieve	0	0	0	0	
Grapes per lb.	1	0	3	0	St. Michael Pines, each	2	0	6	0	
					Strawberries per lb.	4	0	10	0	

VEGETABLES.

	s.	d.	s.	d.		s.	d.	s.	d.		
Asparagus, per bundle ..	7	0	to	8	0	Mustard and Cress, punnet	0	2	to 0	0	
Beans, Kidney, per lb. ..	0	6		1	0	Onions, bushel	3	6		4	0
Beet, Red, dozen	1	0		0	0	Parsley, dozen bunches ..	2	0		3	0
Carrots, bunch	0	3		0	4	Parsnips, dozen	1	0		0	0
Cauliflowers, dozen	2	0		4	0	Potatoes, per cwt.	2	0		4	6
Celery, bundle	1	0		1	3	Salsafy, bundle	1	0		1	5
Coleworts, dozen bunches	2	0		4	0	Scorzoneria, bundle	1	6		0	0
Cucumbers, dozen	2	0		6	0	Seakale, per basket	1	3		1	6
Endive, dozen	1	3		1	6	Shallots, per lb.	0	3		0	0
Herbs, bunch	0	3		0	0	Spinach, bushel	1	6		3	0
Leeks, bunch	0	2		0	0	Tomatoes, per lb.	0	6		0	9
Lettuce, dozen	0	9		1	0	Turnips, bunch	0	3		0	0
Mushrooms, punnet	0	9		1	0						

AVERAGE WHOLESALE PRICES.—OUT FLOWERS.

Orchid Blooms in variety.									
	s.	d.	s.	d.		s.	d.	s.	d.
Arum Lilies, 12 blooms ..	1	6	to	3	0	Narciss, White (French),			
Azalca, dozen sprays..	0	6	0	9	dozen bunches..	3	0	to	5
Bouvardias, bunch ..	0	6	1	0	Pelargoniums, 12 bunches	6	0	12	0
Camellias, dozen blooms ..	0	9	2	0	Pelargoniums, scarlet, doz.				
Carnations, 12 blooms ..	1	6	3	0	bunches ..	4	0	6	0
Daffodil or Lent Lily ..	1	6	2	0	Primula (double), dozen				
„ double ..	2	0	3	0	sprays ..	0	6	1	0
„ single ..	2	6	9	0	Primroses, doz. bunches ..	1	0	2	0
Eucharis, dozen ..	2	0	4	0	Pyrethrum, dozen bunches	2	0	4	0
Gardenias, per dozen ..	4	0	6	0	Roses (indoor), dozen ..	1	0	2	0
Hyacinths, dozen spikes ..	2	0	4	0	„ Tea, white, dozen ..	1	0	3	0
Hyacinth, Roman, dozen					„ Yellow, dozen ..	2	0	4	0
sprays ..	2	0	6	0	Roses (French), per dozen	3	0	6	0
Lilac (French) per bunch ..	2	6	4	0	Roses, Safrano (English),				
Lilies of the Valley, dozen					per dozen ..	2	0	3	0
sprays ..	0	6	1	0	Roses, Maréchal Neil, per				
Lilium longiflorum, per doz.	3	0	6	0	dozen ..	3	0	6	0
Maidenhair Fern, dozen					Tuberose, 12 blooms..	0	6	1	0
bunches ..	4	0	6	0	Tulips, dozen blooms ..	0	6	1	0
Marguerites, 12 bunches ..	2	0	4	0	Violets, Parme (French),				
Mignonette, 12 bunches ..	3	0	6	0	per bunch..	2	0	3	6
Myosotis or Forget-me-					Violets, Ozar (French), per				
nots, dozen bunches ..	3	0	6	0	bunch ..	2	0	2	6
Narciss, various (French),					Violets (English), dozen				
dozen bunches..	2	0	4	0	bunches ..	0	9	1	0
Orchids, per dozen blooms	1	0	9	0	Wallflowers, doz. bunches..	5	0	7	0

PLANTS IN POTS.

	s.	d.	s.	d.		s.	d.	s.	d.
Arbor Vitæ (golden) dozen	6	0	to	12	0	Ficus elastica, each	1	0	to 7 6
Arum Lilies, per dozen ..	6	0	12	0	Foliage plants, var., each ..	2	0	10 0	
Aspidistra, per dozen ..	18	0	36	0	Genista, per dozen	9	0	15 0	
Aspidistra, specimen plant	5	0	10	6	Hyacinths, per dozen ..	5	0	9 0	
Azaleas, per dozen	24	0	42	0	Lilium Harrissi, per dozen	21	0	30 0	
Cineraria, per dozen	6	0	12	0	Lycopodiums, per dozen ..	3	0	4 0	
Cyclamen, per dozen	9	0	18	0	Marguerite Daisy, dozen ..	6	0	12 0	
Dracæna terminalis, per					Mignonette, per doz.	6	0	10 0	
dozen	18	0	42	0	Myrtles, dozen	6	0	9 0	
Dracæna viridis, dozen ..	9	0	24	0	Palms, in var., each	1	0	15 0	
Ericas, per dozen	9	0	24	0	„ (specimens)	21	0	63 0	
Euonymus, var., dozen ..	6	0	18	0	Pelargoniums, per dozen ..	18	0	24 0	
Evergreens, in var., dozen	6	0	24	0	„ scarlet, per doz. ..	5	0	9 0	
Ferns, in variety, dozen ..	4	0	18	0	Talips, per dozen	6	0	9 0	
„ (small) per hundred	4	0	8	0					

Roots in variety for planting out in boxes or by the dozen.



LESSONS OF THE DROUGHT.

To many a farmer already struggling with difficulties did the great drought of 1893 bring absolute ruin; to very many more who are still struggling on it taught lessons plain, incisive, costly—undoubtedly costly, for never did they pay more dearly for the stern teaching of adversity than in this particular crisis. All whose land came under the fell influence of the drought suffered, but some did so much more than others, because of poverty of condition both in the soil of their holdings and in the whole of their live stock. More than this, there was the fact of so many dairy farmers having the whole of their land in permanent pasture, whereon the herbage was scanty throughout the year, and the hay crop practically a failure. Too late was the folly of having nothing but poor pasture realised; cows and store beasts were so poor last autumn that it was only by a considerable outlay upon fodder and roots that they were kept alive during the winter. Where this could not be done tolerably well losses among cattle have been heavy. Only last week were we told of twelve beasts dying in one parish within the week, and we have no doubt the roll of such losses would mount up to hundreds if anything like a check upon them were possible.

The lessons of the drought are not new ones, rather should we regard them as giving point and force to matters patent to every thoughtful person. They showed the true importance of pasture cultivation, of live stock selection, of mixed farming; also the folly of extremes, such as having all the land down to permanent pasture, or all of it arable. They showed, too, that for farming to pay now, not only must cultivation be thorough, but it must be so applied that farm produce may be of the best, and consist of things upon which a profit is still possible.

Of the land laid down to permanent pasture some twelve or fourteen years ago, the cultivation of much of it has been faulty from the beginning. Corn growing had ceased to be profitable, therefore the land "went out of cultivation," for that was the term applied to land laid down to pasture. The term was as misleading as it was deplorable. It might have applied had the land gone out of occupation, but though rents came down tenants were still found for the farms, and we have always held that if it was worth while hiring land at all it was surely desirable to do one's best with it.

To pay rent for land, and then to leave it so uncared for as to become the sport of seasons good, bad, or indifferent, is surely to court failure. It was land so neglected that the drought told upon with such severity that there never was a full bite of herbage, and the hay crop failed so much that one of the midland tenants, holding a farm of about 200 acres, has spent some hundreds of pounds this winter in the purchase of sufficient food to keep his stock alive. Imported hay, oat straw, and roots have been purchased to make good the deficiency in home-made hay. At that farm there has been no systematic pasture cultivation; much of the land was sown without a thought of drainage or preparation of any sort beyond ploughing and sowing. Subsequently there was no sheep folding, no use of chemical manures. The soil was obviously low in fertility, growth in the spring was always late, and last spring and summer there never was anything like free growth of herbage at all. Had the soil been well drained, and so well fed that fertility was fully sustained, growth of herbage would have been so forward when the drought came, that though the hay crop might have been a bit short, it would have been there

as it was elsewhere—a fair crop of sufficient abundance for home requirements.

Often have we said that a farm must be self-supporting, must produce its own hay and all other food required by the live stock. Better convert corn and fodder into milk, butter, cheese, pork, poultry to be sold at a profit, than produce such food and sell it at a loss. It may be thought that this sort of teaching is returning to first principles with a vengeance, but it is necessary. Long have we striven to induce dairy farmers to see how much to their interest mixed farming is; how they should have enough land under the plough to afford a full supply of corn, roots, and fodder for home requirements. Many of those we have tried to help told us last autumn how the drought had brought conviction to them that we were right. Can it be said, under the circumstances, that the British farmer is the practical man he claims to be? Will he apply the lessons of the drought? It will in many an instance not be an easy matter to do so, especially where occupiers are opposed by restricted covenants, and means are strained by poverty of live stock and heavy purchases of food.

WORK ON THE HOME FARM.

Though we have not seen much of the proverbial bushel of dust this March the weather on the whole has been favourable for work on the land, and preparations for Mangold and Carrot sowing are well advanced. See that for Mangolds and early Swedes the farmyard manure is no mere scattering along the furrows, but is thick enough to ensure ample moisture for the roots of the young plants. Better is it to do this well for a moderate area than for one beyond our means. Abundance of nitrogenous manure is what the Mangold revels in; it may be applied in two dressings, part in the furrows before sowing and part upon the surface during the early stages of growth. Rather light land is generally preferred for Carrots, but by sowing somewhat late in April we have had excellent crops on a deep and rather heavy loam. It is certainly an advantage to have sufficient Carrots for use the last three months of the year before turning to the Mangolds; an acre or two usually suffices for farm requirements, but where hunters and carriage horses have to be taken into account due provision must be made for them.

Wherever Lucerne will answer, say in all porous, deep, well-drained soil, there should be enough of it near the homestead for supplying horses and cattle. Never was it more useful than during the drought of last year, its deep-rooting habit enabling it to yield crop after crop of nutritious green fodder, while the herbage of pasture was so scanty. It yields four heavy crops each year, and if drilled wide enough to allow of the free use of a horse hoe it continues useful for many years. The quantity of seed required for drilling an acre is 16 lbs.

Do not forget how valuable a sowing or two of spring Tares is, either for sheep in folds, or for use out on pasture or in yard racks. Giant Sainfoin gives two big crops a year on good land and is one of the most valuable fodder crops for grazing or for hay. It should be sown now on clean land in drills, and is worthy of the best land we can spare for it. We have often sown it in the husk, but prefer milled seed, 56 lbs. to an acre, because of its freedom from burnet. Do not overlook the value of many other green crops, and take care to have enough of them to well cover all possible requirements.

METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude, 111 feet

DATE.		9 A.M.				IN THE DAY.				Rain.	
1894.	March.	Barometer at 32°, and Sea Level.	Hygrometer.		Direction of Wind.	Temp. of soil at 1 foot.	Shade Tem- perature.		Radiation Temperature		
			Dry.	Wet.			Max.	Min.	In Sun.		On Grass.
		Inchs.	deg.	deg.		deg.	deg.	deg.	deg.	Inchs.	
Sunday ..	18	30.334	38.2	36.2	S.W.	40.7	50.2	30.6	76.9	23.2	—
Monday ..	19	30.336	35.2	35.1	N.	39.7	55.1	29.3	91.6	22.6	—
Tuesday ..	20	30.303	48.4	46.9	N.	40.9	54.2	36.1	76.1	31.9	—
Wednesday	21	30.272	45.8	42.9	E.	41.9	57.1	39.7	97.6	28.8	—
Thursday ..	22	30.389	43.1	41.9	N.E.	42.5	48.8	38.9	64.1	31.7	—
Friday ..	23	0.500	40.8	40.6	N.E.	42.4	56.4	37.2	93.0	29.6	—
Saturday ..	24	30.399	40.6	40.4	Calm	42.8	58.6	35.5	97.1	28.4	—
		30.362	41.7	40.6		41.6	54.3	35.3	85.2	28.0	—

REMARKS.

18th.—Sun shining through slight fog till 11.30 A.M., and bright after; slight fog again in evening.

19th.—Slight fog or mist early; sunny morning; cloudy afternoon and evening.

20th.—Fair with occasional gleams of sunshine early, and after 3 P.M.; very gloomy at noon.

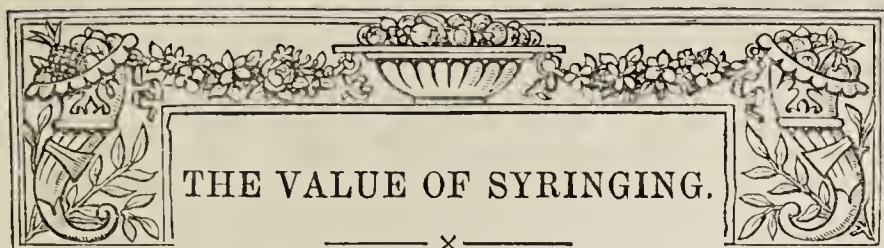
21st.—Bright mild day; clear night.

22nd.—Overcast day, with occasional gleams of sunshine in afternoon; fine evening.

23rd.—Overcast morning; bright afternoon and night.

24th.—Overcast and dull morning; bright sunshine in afternoon; clear evening.

A fine week, the early part cool, afterwards temperature above the average. No rain.—G. J. SYMONS.



SYRINGES and other appliances which are commonly used for distributing water upon the leaves and stems of plants are without doubt potent factors in the production of superior examples of culture among plants and garden crops. It is, however, necessary that their use should be regulated by intelligence and judgment to prevent them being brought into disrepute. Any objection to the practice of syringing plants which I have yet seen advanced rests upon the contingency that under certain conditions harm may be done, and that it is therefore wise to abandon it altogether. To my mind it would be just as reasonable to condemn without reserve the practice of shading plants because at certain times and under various conditions they are better without it. In both cases the mean between the two extremes is the best and most satisfactory course to follow. The immense benefit which vegetation derives from repeated syringings, especially during its most active season of growth, afford strong reasons why we should attempt to supply our plants with "artificial rain."

Some time ago I remember reading a most remarkable work, in which the writer attempted to prove "that the recognised theory in regard to the circulation of sap is altogether wrong; and that the leaves had the power of absorbing moisture from the atmosphere which from them descended to the stems and roots, there to become impregnated with the constituents of the soil. One of the reasons advanced in support of this theory was that a pot plant might be kept perfectly fresh for a long time by the aid of repeated syringings, even though the soil about the roots was very dry; but it was admitted that in order to secure continued health the soil must be moistened too to render it suitable for roots to permeate in search of the chemical constituents which the absorbed moisture was to convert into a soluble form." Many other bold and ingenious arguments were put forward in support of the author's contention, which is perhaps one of the most remarkable theories ever advanced upon any horticultural problem, and one whose foundation rests upon principles which require so little investigation to refute. If, however, no other useful purpose was served by the publication of the above work, it proved conclusively how greatly plants are benefited by syringings, not because the leaves absorb the moisture, but because evaporation is checked in consequence of the tissues of the leaves being surrounded by a congenial atmosphere. In addition to the benefit received in this direction frequently cleansing the leaves by the aid of a syringe must have a marked effect upon the health of plants so treated, by keeping the pores of the leaves open so that they may more readily absorb the gases of the atmosphere.

Turning to the more practical aspect of the subject, who will dispute the wisdom of freely syringing during bright weather Peaches, Figs, Strawberries in pots, Melons, and Cucumbers? Without doing so it is well nigh impossible to keep the leaves of some of these entirely free from insects, and during very hot weather a couple of syringings daily account for the difference between success and failures. Even with Vines, when red spider shows signs of getting the upper hand, thoroughly wetting the affected leaves with soft water is often the safest and most economical way of getting rid of this pest, and but little harm need be done to the Grapes, if the water is directed between the bunches. To obtain extra size in Peaches, Nectarines, Melons,

Figs, and Strawberries, there is nothing like closing the houses early and heavily syringing both leaves and fruits during bright weather. Newly potted plants of nearly all descriptions are greatly assisted by a frequent use of the syringe. The new soil may then be kept moderately dry and sweet till the roots have permeated it, the leaves at the same time being prevented flagging with far less shading than would be necessary without the syringings. This is a matter which I think should receive more attention than it does, for it is by no means unusual to find softwooded plants becoming drawn through shading sufficiently to prevent flagging after repotting. This latter remark is especially applicable to Chrysanthemums, than which perhaps no plants are more benefited by judicious syringings. During the hot days of summer the majority of cultivators recognise the importance of the practice, but all do not seem to be aware how greatly plants may be forwarded in their early stages by daily midday syringings.

Again, with our light modern houses and artificial conditions of heating, how should we manage to keep Palms, Crotons, Dracenas, Ixoras, and Gardenias in health and free from insects if the use of the syringe were not resorted to? Who has not noticed how rapidly these and many other plants make headway when, under the influence of lengthening and bright days, the syringe is brought to bear upon them? In this we are only taking a leaf out of Nature's book, and perhaps improving upon her methods, by giving our plants artificial rain whenever they require it. If we could only ensure natural rain for our plants and crops at the exact time when they require it, what phenomenal harvests might we look forward to in the open air. As we cannot do that we must of necessity depend upon syringings in the case of plants growing in tropical temperatures, where it is not advisable to let the cold rain penetrate, and with others growing in the open air, when rain is absent. If we can only discover some method of imparting to the water which we use the invigorating properties of natural rain, a great triumph for the cultivator will have been attained.

Beneficial as our practice of syringing is, it must not be forgotten that it is quite possible to do much harm by carrying it out indiscriminately. Ever-changing conditions must in all operations guide the cultivator, in none more so than in the use of the syringe. With a continuance of dull or damp days let the practice be temporarily discontinued, and with the return of sunshine begun again. If this rational advice were more closely followed, we should hear fewer objections raised against the use of the syringe.—H. DUNKIN.

[We may add to our correspondent's timely remarks a word in favour of syringing newly planted trees and shrubs as of enormous assistance to them during bright dry weather at this season of the year. If half the water that is sometimes used in saturating already moist soil, and making it colder, were devoted to syringing the stems and branches twice or thrice a day, and particularly in the evening, to reduce the evaporation of moisture from them, far more good would be done, and numbers of trees and shrubs saved that would otherwise perish. Obviously the soil must be moist to stimulate root action, but an excess of water arrests the process, and frequent drenchings keep the ground altogether too cold for free root extension. This, as all good cultivators know, and as our correspondent indicates, is the case with plants in pots, and it is necessarily the same with those in the open ground. Where extensive planting has been recently done the requisite means should be provided for syringing trees and shrubs frequently during periods of dry weather. This can be done in the case of a few isolated specimens with the hand syringe, but in extensive plantations engine power is essential. There are various appliances, large and small, for the quick distribution of water, and it is a mistake to incur expense in planting and not to also provide the needful aids for, as far as is practicable ensuring the satisfactory growth of trees and shrubs.]

GROWING FOR THE SEASIDE MARKET.

VEGETABLES, FRUIT, AND OZONE.

"BLESS you, I could eat like a horse!" This is what every friend tells you when, tanned and bronzed, he gives you some particulars of the seaside holiday from which he has just returned. Impartial observation hardly bears out the implication that the gastronomical abilities of the faithful steed are so much in excess of those possessed by most other animals that he can be justly singled out to provide the necessary simile; but custom has ordained that on him, and him alone, its burden shall rest. True it is that the element which the chemist, with a fine sense of expository clearness, defines as an allotropic modification of oxygen is a splendid appetiser, and consequently we find that the seaside markets have to be more heavily charged in proportion to the mouths to be fed than those of inland towns.

Where a few popular seaside resorts cluster somewhat thickly together there is an opening for market garden enterprise which is not to be despised. If they are fairly large places the normal population keeps things moving through the dull half of the year, while in "the season" the influx of hungry visitors gives an immense impetus to trade. There are two such clusters which I have in view, or perhaps the stretch of towns could be better divided into three groups—(1) Hythe, Scabrook, Sandgate, and Folkestone; (2) Dover, Walmer, Deal, and Sandwich; (3) Ramsgate, Broadstairs, Margate, Westgate, Birchington, and Herne Bay. Of the three groups the two latter are liberally catered for, but in the first it seems to me that there is an excellent opening for an enterprising marketman. The towns are growing rapidly, and the market is a capacious one. A well managed all-round establishment would pay, and it is surprising that the chance of building up a lucrative business has gone begging so long. The well-known Canterbury nurseryman, Mr. Mount, has just started a nursery at Folkestone, and it will doubtless fill a much-felt want; but I am strongly of opinion that a competent marketman would have an equally good opportunity.

In growing for the seaside market provision has to be made for a large and constant supply of vegetables and fruit from June till October inclusive. The demand then is enormous, and the yearly growth of the towns favours its increase. I recently had a chat with one of the largest market growers in the little isle, or erst-while isle, of Thanet, where the hedgeless fields and broad marshes of fat grazing land extend for many miles. The farm, or rather collection of farms, comprises between 300 and 400 acres, mostly under fruit and vegetables. Managed as it is on up-to-date principles, the amount of produce obtained from this large area is very great, and the chief bulk of it goes to the coast towns. It is impossible to avoid contrasts between this huge garden farm and one under agricultural crops. In the capital that is being turned over and the labour employed it is as a Regent Street emporium to a suburban back-street shop. The whole place is full of life, not in a semi-somnolent condition. In the years that are gone corn was grown, but with Wheat at 26s. the quarter the Thanet cultivators know better than to trouble about it now.

Some of the Essex farmers whom I have met of late object vaguely to garden crops, even although admitting, nay bitterly complaining, that things are going to rack and ruin under the old régime. Are Potatoes suggested? The market has been long over-stocked. Are Onions referred to? There is no demand for them. If it is pointed out that the importations go on increasing by leaps and bounds, thus proving by the irrefutable testimony of facts that there is a demand, and a growing one too, some other excuse is resorted to. I asked the Thanet marketer if he found Potatoes answer. "Come," was his reply, "and see how we do our early ones. I think it will please you." I went, and the sight I saw is one that I shall not soon forget. Substantial brick sheds, warm but well lighted, shelter hundreds upon hundreds of shallow boxes, wherein earlies and second earlies have been sprouted so as to give strong and early produce. The boxes have been specially made of stout deal, and hold half a bushel of tubers. Each one rests upon the edges of two others, a wooden block being inserted between so as to lift them clear, and so they are stacked from floor to roof, like huge columns of sacks in a great seed warehouse, but with air playing freely between and amongst them. No long, white, weakly sprouts, like so many churchwarden pipes, are pushed by these tubers, but each has a stubby shoot nearly half an inch thick firmly fixed to the tuber, and with roots bristling at the base. These are already plants, and when they are put out their growth is early and vigorous, giving produce in advance of that on the leave-alone system, and consequently more valuable. The outlay in boxes alone must have been close upon £50, and it is easy to imagine the horror of many a worthy old farmer if it were suggested that he should expend even 50s. in boxes for sprouting

seed Potatoes for field cultivation. He would scout the idea of its paying at any cost, but the wide-awake seaside grower goes on increasing his stock of boxes every season. He can sprout between 400 and 500 bushels of Potatoes now, and is working his way steadily to the thousand.

"And about Onions, Mr. Philpott?" I asked, as the Potato inspection concludes. There were not many left, for the great bulk had been profitably disposed of, but there were a few samples of White Spanish far in advance of the ordinary farm quality, and perfectly sound. They represented high garden culture. Parsnips were nearly done, for there is quite a rush for this wholesome and nourishing vegetable during Lent, when the butcher has his slack time, but a good heap of Carrots remained. The variety is Sutton's Intermediate, which is found to be one of the best for market, as it has already proved itself a grand exhibition sort. It is noteworthy that new varieties, however high-priced, are constantly being tried in the hope of finding improvements. This applies to Cabbages, Broccoli, and all other vegetables besides those named.

I hinted that the land must be highly fed to yield the produce it does, and am told that all the manure of the Ramsgate Corporation is taken, besides that made at home, and that in addition to these two sources of plant food, which in themselves represent an enormous amount, 1000 loads are contracted for in Margate. Think of the handsome annual income that the money spent on manure would represent if it were not laid out as it is in this case. But it is through high cultivation that the money comes. If it were not spent ungrudgingly to feed the soil the magnificent crops would dwindle to insignificance, and instead of prosperity there would be the gradual drifting towards insolvency which is so mournful an aspect of much British farming. Fruit is fed as well as vegetables, and the broad acres of Apples, Plums, and Cherries, of Currants, Gooseberries, and Raspberries, every tree and bush a lesson in itself of the benefits of judicious pruning, adequate nourishment and cleanliness, form an eloquent and impressive sight.

This splendid farm, the excellence of which would gladden the heart of any observer who rejoices to see his country doing itself justice by sound methods and intelligent work, is under the management of a young man of twenty-three. The shoulders are young to bear so heavy a burden, but a practical business training has qualified him for a task which a sad calamity threw upon him long before it might, in the ordinary course of nature, have been expected. Mr. Philpott allies sound ideas with a singularly modest demeanour, and a disposition for acquiring fresh knowledge and improved methods. A complimentary reference to what has been done brings a quick reply that they are always willing to learn more.

If I may venture to point a moral to this short story it would be that enterprise, hard work, and practical methods have not yet had their last word in England. The old country is not played out, nor is it moribund. There is fight left in it, and prosperity yet to be won on the land. But the old methods must go. The slough of despond in which we are struggling now is simply a mire of mingled embarrassment and red-tapeism, and in due course it will be left behind. Our cultivators will awaken to the fact that it is change, not collapse, which threatens them, and when that is recognised the calm appropriation of British markets by foreign producers will be contested with the old spirit and the old success.—W.

ONION CULTURE AND MASTERING THE MAGGOT.

I DID not intend joining in the discussion in the *Journal of Horticulture* respecting the destruction of the Onion maggot, as I had previously detailed my routine of culture, and which I adhere to for securing a good, sound, clean crop of Onions annually. However, it is always interesting and instructive to read of the success or failures of other people, and I shall be glad if I can help anyone in obtaining a good crop of Onions in spite of the maggot.

Mr. J. J. Craven (page 235) asks me to describe the routine I should adopt if I were circumstanced as growers are in his district. My reply is, that I should follow the methods I have practised without a failure in different parts of the country for fourteen years, and if by chance I did not succeed in Mr. Craven's district, I should apply such further remedies as I considered necessary, and as I observe he is doing in order to secure success.

I never crop the same piece of ground two years in succession with Onions, or any other crop for the matter of that. My Onion beds go the whole round of the garden quarters in due course. I advocate deep cultivation of the soil; in fact, one-half of the kitchen garden here is bastard trenched annually, and the next

year's Onion bed is always ready by the second week of November. Other work has to give place to the preparation of my Onion site. I never use fresh manure, but material from a hotbed and plenty of burnt refuse and lime as the trenching proceeds. When the site is finished the soil is allowed to lay unmolested until the middle of February. A further dressing of burnt refuse is then spread over the whole piece 1 inch thick, and either well raked or slightly forked in the soil on the first fine day. Drills are drawn from 9 to 10 inches apart and the seed sown as early as possible in March. I used to tread the ground but have given up the practice, as I find the soil here gets sufficiently hard in the sowing process and the after treading in thinning and when applying soot.

I always thin my Onions as early as possible, and give the whole piece a dressing of soot either in the evening or early morning, and apply the Dutch hoe between the drills. The sooting and hoeing are repeated as often as necessary. I also give a good dressing of chemical manure twice during the season in order to produce a strong, healthy, quick growth of the plants. Certain it is that many persons fail in securing a fine crop of Onions through inability to find the necessary hands to attend to the thinning and working amongst the crops just when most attention is needed.

I hold with your able correspondent, Mr. Dunkin, that repeated applications of soot (not too fresh) and the free use of the Dutch hoe, coupled with early thinning of the seedlings, is the best procedure in obtaining a heavy crop of Onions. Two striking cases which came to my notice last season prove the truth of my assertion. Two keen amateurs came to me in May and asked what they were to do, as the maggot had attacked their Onion bed? These amateurs spare no time or expense in achieving their object. I told them to thin out their Onions 3 inches apart at once, apply a good dressing of soot all over the bed, and hoe between the rows as quickly as possible afterwards, repeating the sooting and hoeing every four or five days; also apply a dressing of chemical manure, and as the weather was dry to water it in. Result: the grub was settled. Both amateurs secured an excellent crop, and can testify if necessary that it was through the treatment advised. These amateurs have plenty of Onions at the present time, and one was offered 10s. per cwt. for his produce. They both told me they never had such a crop of Onions before. The varieties grown were Veitch's Maincrop, Selected Globe, and Bedfordshire Champion.

If Mr. Craven had called here last season he would have seen a heavier crop than 25 cwt. of Onions on 104 square yards of land from seed sown March 7th, 1893. I find no difficulty with the Onion grub, either with plants from autumn-sown seed, plants raised in boxes for transplanting, or seed sown in drills. I am having my Onions from boxes planted in the open quarter to-day, March 31st. I follow the same routine with all sowings, and all alike have annually proved satisfactory in quantity, cleanliness, and keeping.—JOHN CHINNERY, *Downton Castle Gardens*.

A PROLIFEROUS HYACINTH.

IN consequence of the great heat in Holland during the ripening period of the plants last year many bulbs have produced two and more flower spikes this season, in some cases to the annoyance of growers who prefer one massive cone of flowers. Some persons, however, rejoice in a multiplicity of spikes when they are fine, and certainly a noteworthy example is shown in a photograph sent by the Hon. Mrs. McCausland. This lady writes:—"A bulb of the Hyacinth Macaulay, purchased from Messrs. Veitch last autumn, has produced eleven perfect trusses, all being of a large size and well surrounded with foliage, producing a most gorgeous effect, being of a deep bright pink, and all in bloom at the same time. Only nine could be shown in the photo, and perhaps the plant may be worth mentioning."

We think it not only worth "mentioning" but illustrating (fig. 42), not because of the number but of the size of the spikes. Possibly we may hear of other similarly notable specimens, but all the same, the bulb in question was a good one, and justice has been done to it by the cultivator.

THE GLADIOLUS IN SCOTLAND.

IN Scotland I cultivate the Gladiolus in several respects differently from the method successfully pursued by cultivators in the south of England. It is here a common occurrence for later varieties not to flower at all, and as some of the best sorts are late this is a matter of much disappointment. Besides, there is a difficulty in ripening the plants, resulting in the depreciation of the corms and a consequent loss of many of them. Induced by these things I several years ago adopted a practice which was

common among an older race of gardeners. This was to have the plants well started into growth before putting them into the ground. I have found this method succeed well, so much so that all the plants bloom, the corms ripen, and moreover the period of flowering is extended a few weeks.

At first I started the corms too early, and this is a point of failure with many growers. The result often is that strong vigorous plants put out in May are sometimes cut down by a late frost. I do not now start the corms until the beginning of April, at which time they commence to grow vigorously in the temperature of a late vinery. By the beginning of May they are ready to plant out. I have no difficulty in preventing the more forward sorts starting into premature growth, as the place where they are stored is cool and dry. So far as I remember the Gladiolus is not subject to damage from frosts in May in the south of England, therefore the season of growth is much longer than can be counted upon in Scotland. Growers of a few corms can forward their plants in



FIG. 42.—A PROLIFEROUS HYACINTH.

pots, but as a very large number are grown here, it is not practicable to give them the requisite space, therefore the corms are placed close together in cutting boxes, in the bottom of which a layer of open leafy compost has been placed. It is not necessary to cover them, although I generally place on a covering of moss, which is of advantage in keeping the soil moist. I have adopted the plan of cutting the corms, and believe this to be decidedly advantageous.

The Gladiolus in some respects is a somewhat exacting plant. For instance, I have attempted to cultivate it in borders of mixed plants, but have invariably failed to succeed. It likes a specially prepared site, and if one can afford to import fresh soil the plants appreciate and respond to this treatment. I also find that certain positions in the garden are liked better than others. Perhaps the best place to locate them is on a border facing the western sun. In connection with this point I think there can be no doubt that the Gladiolus succeeds better on the west side of the island, where the air is more moist than it does in the drier eastern counties. It also does well in hilly districts. I have repeatedly noticed the good effects of a few dewy nights, the result being larger flowers, and therefore better spikes. Splendid examples are produced in Ireland, where the Gladiolus is practically a hardy plant.

I plant the bulbs at a less depth than is generally practised. This promotes the ripening of the plants in the autumn, and I do not find that it affects the flowers injuriously. They are placed from 3 to 4 inches apart in the rows, and the latter 1 foot asunder.

Three rows are arranged together, and then a wide alley to get at the plants. Water during drought is indispensable. Manurial dressings applied to the surface of the soil, to be washed in by rain or by watering, is of much benefit. Of these the cheapest and not the least effective is soot, while dry cleanings of pigeon cots mixed with an equal bulk of soil is very good.

As has been said, the practice of planting out bulbs well started into growth extends the period of flowering. It does this by forcing the whole stock into flower earlier, so that spikes are produced almost as early in Scotland as they are in the south of England. Several years I have had spikes in July, before the last ones of *The Bride* and *Insignis* were cut. I fancy also that the plants contract a habit of flowering earlier, in the same way that the *Arum* and *Lily of the Valley* which are forced year after year do. It has also been noted that all the late sorts flower out their spikes. This, of course, indicates the growth of the plant to be finished at an earlier period of the autumn. For several years I have made a practice of lifting the bulbs when the season of flowering is ended. The rule is to ripen off green-leaved plants in cool glass structures. This, however, has a disadvantage in the corms shrinking, no matter how careful one may be in carrying out details. If the plants are left lying on the surface of the ground, exposed to sun by day and to dew by night, no shrinkage takes place, while the ripening process is perhaps better completed by this method than by any other. I lift the earlier flowering varieties immediately the foliage of these decays, for if left in the ground they are apt to push new roots during the autumn, and I do not think this can be of any benefit to the corms.—R. P. BROTHERSTON.

(To be continued.)

HOW TO MAKE GOOD USE OF BULBS.

It seems to me that one feature of the gardening of the future will be the great attention paid to the employment, in various ways, of the many beautiful species and varieties of spring flowering bulbous plants, springing up as they do at a time when Nature is awakening from her long winter's rest, when the budding trees and deep green verdure give a peculiar charm and freshness to all around, their own intrinsic beauty is displayed under conspicuously favourable conditions. Then, too, this numerous class of easily grown plants supply such infinite variety in the form and colour of their flowers, that fastidious indeed must be the taste that is not suited among some or other of them. Those who have a decided preference for the most showy colours to be met with in our gardens may have them in abundance among *Tulips*, *Daffodils*, *Hyacinths*, and *Narcissi*. Others who prefer deeper and richer colours will have no difficulty in finding them among the same species, and many who find an endless charm in studying the exquisitely blended tints of less pronounced and more delicate colours will be able to suit their taste among some varieties of each section. So great is the demand for cut flowers in the majority of private establishments, that it is necessary to have large supplies to draw upon in addition to those which are grown under glass. During the summer months there is usually abundance of materials suitable for the purpose, such as *Roses*, *Heliotropes*, *Carnations*, *Pæonies*, *Clematis*, *Asters*, *Stocks*, as well as hosts of herbaceous plants, but I think with a slight outlay and thoughtful management our gardens might be made more attractive than they frequently are during the spring months.

Large numbers of bulbs are grown in pots in most gardens of pretension. Every one of these bulbs ought to be taken care of, and eventually planted in the open air, where they each year increase in strength, beautify many an unsightly spot, and yield abundance of exquisite flowers well adapted for use in a cut state. It is well to bear these facts in mind from the present time onwards, and take the first step towards securing a good display in the future by paying a little extra attention to bulbs in pots as they go out of flower. Too often they are brought from the heated rooms of the mansion, placed in any out-of-the-way position in the open air, and left to take their chance. Instead of doing this, if a cold pit or rough frame can be set asunder for the purpose of receiving bulbs in pots for a few weeks after they have done flowering, they will then be sufficiently hardened to bear placing in a sheltered position in the open air. Then with regular attention to watering till the leaves die down naturally, sound, well ripened, healthy bulbs are the result, instead of starvelings, which are scarcely fit for anything but the rubbish heap, for if planted in the open air such take several years to recover themselves. I like to leave the bulbs in pots for some weeks after every vestige of foliage has died down, and allow the soil to become quite dry. They are then in excellent condition for storing away till planting time. A good method of storing is to place each

variety separately in shallow boxes or pans, cover the bulbs with dry soil, which helps to keep them plump, and stand in a dry cool position till October, when they will be ready for planting in their permanent quarters.

In many establishments a strip of soil in the reserve garden is set apart for these forced bulbs, where they gradually recoup themselves and supply numbers of useful cut flowers. This is an excellent plan in those instances where they are not required to adorn some portion of the wild garden or shrubberies, and a great advantage of the system is that proper cultivation can be given them.

Another good method of turning forced bulbs to account is to plant them in the foreground of shrubberies or in clumps in mixed borders. If set from 4 to 6 inches (according to the size of the bulbs) below the surface they may remain undisturbed for years without interfering greatly with those plants employed in the same positions for providing a summer display.

Another way of putting bulbs of the above description to a good use, and one which I wish to especially advocate, is that of planting them in masses under trees, where the grass is occasionally mown with a scythe during the summer months. In nearly all private gardens such spots may be found, and with but little expenditure of labour may be converted into a veritable paradise of flowers during spring time. In order to produce a fine effect it is important not to dot the bulbs about indiscriminately, but rather to plant large masses of each variety. To accomplish this with bulbs which have been used for forcing is a matter of years. A certain space should therefore be set apart for each kind, and be filled up by degrees, except in the case of *Snowdrops*, *Crocuses*, *Scillas*, and the more common kinds of *Daffodils*, which are seldom grown in pots, and which can be bought so cheaply that in many instances bold masses of some of them may be planted completely each year. In planting I find it advisable to make the holes in the turf with a crowbar or stick, drop in the bulbs, and fill the holes with good garden soil.

When a natural garden of spring-flowering bulbs is thus established, they should not be left entirely to themselves, but ought to receive a dressing of well-decayed manure in the autumn at least once in two years. This little attention will be repaid tenfold by the extra vigour and good health in which the plants will be maintained.

Those who venture to carry out the ideas I have attempted to elucidate will, I think, be delighted with the results, and I am sure they will find it difficult to convert so easily by other means many an unattractive spot into a vision of surpassing beauty.—A FLOWER GARDENER.

ROYAL HORTICULTURAL SOCIETY AND THE CRYSTAL PALACE.

IN thanking you for the notice (page 240) which you gave last week of the proposed renewal of the Great Autumn Fruit Show at the Crystal Palace, may I be allowed to again draw your readers' attention to the subject?

1, There is, I believe, no such place in the world so suitable for a great fruit show as the Crystal Palace; there space and light, the two great desiderata, are practically unlimited.

2, Other shows have come and gone, but until 1892 the Palace Show never failed, and was unanimously regarded as the great fruit event of each year.

3, The Royal Horticultural Society has offered, with the consent and co-operation of the Palace authorities, to revive this autumn fruit show, if those interested in fruit growing in this country will manifest that interest by practical support.

4, (a) The Palace offer £100 towards the prizes, undertake the advertising, will lend their staging, and will "pass" all Fellows' tickets of the Society. (b), The Society will undertake the whole of the correspondence, work, and labour of the Show, and all further pecuniary and other responsibility (the total cost cannot be far short of £400). Except (c), a sum of £100 towards the prizes, which they ask in subscriptions from the public as a proof and earnest of the practical interest they feel in the matter, this £100 to be promised on or before Tuesday, April 10th at noon, when a definite decision of whether to hold the Show or not has to be arrived at.

5, The Show (if it be held) will not be a mere show, but advantage will be taken of it to gather together representative collections of hardy English fruits, and public lectures will be given on two days of the Show on the subjects concerned.

6, This is how the matter stands at present. It rests entirely with growers of fruit trees and of fruit to say whether the Show shall or shall not be revived, and this they will say by their promised or withheld subscriptions.

The Society and the Palace authorities are each (as it seems to me) making a liberal offer to those interested in fruit growing in this country, and if they are unwilling to accept it at the cost of £100 worth of subscriptions, gathered from all concerned, I fear it will be a long while before an offer of similar liberality will be made.—W. WILKS, *Sec. R.H.S.*

As a Fellow of the Royal Horticultural Society who is such because a devoted admirer of scientific and practical horticulture, I have been greatly pained to read the intimation conveyed in your columns that the Council of the Society propose so far to depart from their proper functions as guardians of the honour and interests of horticulture as to ally the Society with a trading company in a purely speculative object, that of promoting a great fruit show, towards the expenses of which the Council bind themselves to furnish from the Society's funds the sum of £100. Granted the sum is not large and the risks few, yet there remains the undoubted fact that the Royal Horticultural Society is playing down low with the money of the Fellows in the interests of a mere trading company, not so far as I can see in the interests of horticulture, but rather to endeavour to gain *kudos* with some of its trade and exhibitor supporters.

What are the presumed objects of the Society? They are to develop horticulture scientifically and practically in every legitimate way, as is done at the regular meetings of the Society, through its publications, which are excellent, and through the gardens at Chiswick, where at the present moment not £100 but £500 are badly needed for placing every department in complete efficiency. How will the holding of a competitive Fruit Show help to either of these ends? To that question I should like to have a reply.

I am told that a great Fruit Exhibition at the Crystal Palace will help to promote that important branch of horticulture known as fruit culture. The Crystal Palace Company held such shows for many years, but I have yet to learn that any other result followed than that certain traders found these shows to be excellent advertisements, and that exhibitors, chiefly well-to-do gardeners, who think, so far as it presents itself to me, far more of the dollars than of horticulture, managed to pick up profitable prizes. Is it not really from this class has come the cry for the resuscitation of the autumn fruit shows? and do they not hope, should the Show take place, to get a good portion of the £300 prize money it is purposed to offer? Where the carcasses are there will be the vultures gathered together, and already do I hear the cries of the creatures resounding in my ears, perhaps metaphorically, as they quarrel and contend for the spoil.

Very likely you will think I am somewhat strong in my language, but then I am a horticulturist pure and simple, a lover of what is good and beautiful in it. I am not influenced by any mercenary considerations; and as a Fellow of the Royal Horticultural Society I am such just because I am what I have described and no more.

Look at the magnificent shows held in the Temple Gardens every year, some of the finest expositions of horticultural produce, especially florally, ever seen anywhere. There is no flavour of trading association there and no contentious grabbing for prize money. Nothing can, I think, be more honourable to all concerned in the creation of these fine shows than that it should all be done from pure love, and not for gain. Then there are our ordinary meetings; look at the displays made at these of all sorts of products, and where the ring of the prize dollar is not now heard. What but love for horticulture and wish to promote the welfare of the Society creates these? Look even at the noble because purely gratuitous work done by the Committees of the Society. See how the members gather meeting after meeting to perform the useful and important functions they have undertaken at considerable personal cost without fee or reward, and almost without thanks. With so much of the great work of the Society so admirably performed without pecuniary consideration, why should the Council propose from out of the very moderate funds of the Society to take up the work of promoting a trade exhibition at the Crystal Palace which the Company has thought proper to drop, because as a trading speculation, on the part of the Company, it was a failure?

It is against any such improper diversion of the funds of the Royal Horticultural Society, to which, as a humble member, I contribute, as do many others that I enter this protest. I may, after all, be but as one crying in the wilderness. That is usually the lot of the prophet who has a soul above mercenary considerations. I can very well imagine that this protest will raise a chorus of opposition. £300 is, in these hard times for exhibitors, an attractive sum; it is valuable prey. No doubt if the extra £100 needed be furnished from outside the Society, the Show will be held; but when it has been, and all is over, what will the Council

have to show but that they spent £100 in prizes for fruit at the Crystal Palace? and that is all. As for any horticultural good resulting, that will be absolutely nil.—A. F.R.H.S.

[The view of the question as presented by our correspondent did not occur to us when penning the note on page 220. It is all the same a legitimate view, and he is entitled to present it, while Fellows of the Society who may entertain different opinions are equally entitled to express them. Perhaps the Society would not object if nurserymen were to collect £100 and exhibitors a similar amount, and in this way meet the objection; but then again the showmen might object. We can only repeat that we should like to see a Fruit Show promoted by the Royal Horticultural Society, and held at the Crystal Palace in the autumn.]

LAWN MOWERS.

AMONGST the inventions modern ingenuity has brought to the gardener's aid, not any, I think, have so great a bearing on the labour department as the lawn mower. Very much a matter of fact is it with the rising generation who have not heard the musical sweep of the scythes wielded in the early morn by some half dozen mowers, led by an old skilled hand, step by step forming a diagonal line of march across "the dew besprinkled lawn," taking time by the forelock. "Mow brothers, mow; the dew dies fast," was the incentive to accomplish a certain feat before breakfast, when the scythes were hung up for the day.

With some of the new pattern lawn mowers there appears but little, if any, room for further improvement either in the quality of the work or the ease and rapidity with which they perform it; the latter an important consideration for man or beast. For a man who furnishes the motive power for a hand machine during a day of ten hours continued for several days of the week, it is but justice and mercy to see that he is provided with all the benefits of modern improvements which tend to minimise the laborious duty, for unlike the scythe, the new order of things carries on the work through "the heat and burden of the day." And it is, too, to that man's interest, not only to push his machine from morn till eve, but by a little wholesome inquisitiveness make himself acquainted with the mechanism, and by so doing pay those little attentions to his fellow worker, to their mutual benefit. He who does this, and he who does not, means much either way to "the gaffer." It is not agreeable to have a man march up to you, propelling the implement reversed, saying, "Gaffer, she won't work no more, there's something wrong inside. See how she squeaks, and I'm kilt a pushing her. She's done, you'll have to get a new one." Nor does it add to your complacency to find the man in trouble has replenished his oil feeder from your Fir tree oil can, which I have experienced, and on one occasion had a strong suspicion that a tin of oak varnish had been doing the same duty.

One feels reluctant, from obvious reasons, to glorify any special make or maker, motives of delicacy leading us to err on the right side. Nor will I say what extent of lawns we have to keep, for the simple reason that I do not know, but it is a matter of surprise to inquiring minds that two 16-inch machines are able to do it. On hills and slopes at the mountain foot, showing its toes in the granite cropping up, horse-power mowers are practically out of the question, which, with their weight proportionate to greater strength required, have the advantages of rolling and consolidating the level stretches of lawn to which they are best suited. Oft-times with these, the pilot, to save after trouble, is tempted to steer close—too close—to specimen trees, and not infrequently is evidence to be seen of this in scars which are not honourable ones.

Taking thought of the amount of work done by lawn mowers generally, large or small, and the admirable manner in which they keep the lawn, "all shaven and shorn" when running smoothly in perfect order, any little attention to keep them so may be ungrudgingly given, for they require something more than the periodical oiling, supposing that to be properly done. Twice at least during the season they should be taken to pieces and cleaned, and when the work of the year is over and they are put to rest, let it not be "out of sight and mind" under a bush or in the corner of some damp shed. I find it a good plan to take them all apart, conscientiously removing all screws, whether appearing necessary at the time or not, and give the whole anatomy a hot bath with plenty of soda and soft soap in it, scrubbing each piece and thoroughly drying all.

To a novice, the diagrams usually supplied with the machines render refixing tolerably easy, though care must be taken that nothing goes astray. All parts are essential; needless to say that, I suppose, but I think of one occasion when the job was done by deputy, and well done too to outward appearance, only "She wouldn't work." The reason given was, "Well, I'm sartin sure there's no more to go in, unless one o' they little wheels went

astray on me," and that was what had happened. When thoroughly cleaned, dried, put together, ground if necessary—a simple and easy work for which I use the very fine silver sand applied in the stables for cleaning bits—they (or she) can have a coat of varnish, paint, or enamel, and be put in dry comfortable quarters for the winter.

With the diagram of any machine it is easy to obtain and replace any worn part at small cost, and with the periodical overhauling I advocate screws and nuts are readily removed; but where the useful and now indispensable lawn mower gets nothing but the constant pushing and no farther care nor thought, the inevitable breakdown too often means a break up as well in hammering or forcing those parts fixed by rust, dirt, and neglect. — E. K., *Dublin*.

POTATO AND ONION EXPERIMENTS AT WARMINSTER.

UNDER the auspices of the Technical Education Committee of the Wilts County Council experiments were conducted with the crops mentioned last year, evidently with great care, and the results are given in a report almost of a luxurious character. This report has been prepared by Mr. E. S. Beaven, Hon. Secretary of the Committee of the work; and Mr. E. H. Smith, the Superintendent of the operations. It is a credit to both for the painstaking manner in which everything appears to have been done and the results collated. It is possible, indeed, that some persons of an utilitarian turn of mind may even regard the proceedings as almost needlessly exhaustive; but, on the other hand, those who delight in exact methods will find a happy hunting ground in the array of figures set forth as representing the outcome of the experiments.

First the soil was carefully analysed, and judging by its mechanical components and chemical constituents we can but marvel that such a sandy and gravelly medium, containing such a small amount of available plant food, should yield Potatoes at the rate of upwards of 15 tons per acre on unmanured plots. In one instance we have 17 tons 9 cwt. as the yield without manure. With farmyard manure at a cost of £8 an acre the crop is given as equal to 20 tons 16 cwt., and with a "complete" chemical manure, costing £3 12s. an acre, the yield of Potatoes was 21 tons 16 cwt. According to the present price of Potatoes it would seem to be more profitable to grow them without anything at Warminster than to use farmyard manure, though there was a decided gain by the chemicals.

Experiments with close and wide planting resulted in a gain by the former of about 7 per cent. This is supposed to be due to the dry season, as no doubt it was, as the previous year wide planting gave the best yield. Over a great number of years the best growers of Potatoes in Lincolnshire, where the cultivation is so extensive, have found that, taking one year with another, the most profitable planting distances for the ordinary late varieties, such as *Magnum Bonum*—now being superseded by the *Bruce*—are rows about 27 inches apart, sets 14 inches asunder. This is more trustworthy information than a year or two's experiments anywhere. The Warminster distances were—rows 31 inches; sets 17½ inches; and 22 by 15½ inches respectively.

As this is the Potato planting time, the experiments with different sized sets, whole and in a cut state, at Warminster will be suggestive, and we therefore cite the following, the same extent of land being planted in each case:—

SIZE OF SETS AND YIELD OF PRODUCE.

	lbs.		lbs.
6 oz. sets (whole tubers) ...	143	4 oz. sets (halves) ...	129
4 oz. sets (whole tubers) ...	134	2 oz. sets (quarters) ...	125
2 oz. sets (whole tubers) ...	109	1 oz. sets (single eyes) ...	53

Considerable care was exercised in the selection of these sets so as to make the comparison, though on a small scale, accurate, and the results are generally confirmatory of those which have almost always been obtained in similar experiments carefully made, and point to the conclusion that a good-sized whole tuber makes the best and most profitable set. The Committee have been favoured with the following results of a similar trial on a large scale made by H. P. Jones, Esq., of Portway House, Warminster:—

18 perches planted with *Imperator*:—

4½ perches uncut seed gave a yield of 642 lbs., or 10 tons 3½ cwt. per acre.
13½ perches cut seed gave 1404 lbs., or 7 tons 8½ cwt. per acre, showing a gain from the uncut seed of 2 tons 15 cwt. per acre.

18 perches planted with *Sutton's Masterpiece*:—

9 perches uncut gave 830 lbs., or 6 tons 11½ cwt. per acre.
9 perches cut gave 615 lbs., or 4 tons 17½ cwt. per acre, showing a gain from uncut seed of 1 ton 14 cwt. per acre.

13 perches planted with *White Elephant*:—

9 perches uncut gave 1045 lbs., or 8 tons 5½ cwt. per acre.
9 perches cut gave 1035 lbs., or 8 tons 4 cwt. per acre, showing a gain from uncut seed of 1½ cwt. per acre.

Many experiments were made for preventing disease by spraying with Bordeaux mixture at the end of June and end of July. This, in the case of late varieties, resulted in an average gain of 3 tons an acre. As a result of the trials *Imperator* and some very late foreign varieties

appear to be regarded with favour for future planting. In the great Potato growing districts *Imperator*, after being grown for many years, is superseded and practically ostracised because it does not pay, and though late "foreigners" may have answered well last year in England, the season was abnormal. We should hesitate to recommend them on the experience of one such year alone, and will await the results of further trials, which are conducted so well at Warminster.

ONIONS.

The experiments with Onions are necessarily inconclusive, seeing that preventive applications were applied too late. The destructive fly took hundreds of persons by surprise last year in commencing work much sooner than usual. We know of one instance where a market grower commenced sooting immediately the plants were visible, and by continuing it, keeping the land black, succeeded in harvesting a full and valuable crop of Onions, while in the gardens around the crops were ruined. We fully agree with the concluding paragraph of the Warminster report—namely, "In view of the enormous and increasing importation of foreign Onions, reaching in 1891 over 4,000,000 bushels, it seems desirable to extend the experiment with Onions in other directions, and it is proposed, in addition to the trials of insecticides next year, to test the effect of 'transplanting,' which has been carried out on a large and profitable scale in America for some years past."

We have received a critique of the Warminster experiments from a correspondent, but it cannot be published this week.

PEAR BEURRÉ RANCE.

THERE can be no mistake about the value of this large, delicious Pear for late use. Like most Pears it ripened a month earlier this season than usual, as the result of the great amount of sunshine during the whole of last summer; but it was just the kind of weather we require for Pears on our heavy soil for bringing up their true flavour.

Never in my twelve years of experience in this district have I known Pears to swell to such a size and develop such fine flavour as in 1893. In the case of *Beurré Rance*, which is grown on a wall with a west aspect, the average weight of the fruit was from 10 to 14 ounces each, and the flavour excellent. Usually this Pear will keep some time after being fit for table without deteriorating in flavour, but this year more than fifty per cent. started decaying from a centre on the outside as soon as the fruit approached the ripening stage. This form of decay has been very common in all Pears and Apples this season, and after careful examination I am satisfied it is the result of being punctured by wasps when the fruit was hard and unripe—hence, as they became ripe, they began to decay at the injured spot. In nearly all I examined, both Apples and Pears that started decaying in this premature manner, there were little hard cores about the size of a pin's head close to the skin in the centre of the decayed patch. The amount of damage done to fruit by wasps last year will never be known. We gave up six large bush trees of *Beurré d'Amanlis* entirely to them, which prevented them to a certain extent attacking other varieties. *Beurré Pears* are sweet long before ripe, hence the preference of wasps for them. Indeed, they devoured them to their skins long before they could ripen.

We have already killed several queen wasps this year, and a sharp look out is being kept for them, as no doubt they will muster in great numbers this spring after such a favourable season.—J. H. W., *Leicester Frith*.

HARDY FLOWERS FOR EXHIBITION.

"INQUIRER" (on page 241) asks too much of me. The list of hardy herbaceous and bulbous plants that was published in the *Journal* on February 22nd was not for the benefit of "amateur champions," but solely for the benefit of "inquirers after the truth!" I really could not trouble again those who so kindly, and at so much trouble, enabled me to tabulate the results which produced that list. I take it that stands of herbaceous and hardy flowers are judged much as *Roses* are, where a *Maréchal Niel* Rose at its best would not receive more points than, say, a *Dupuy Jamain* at its best, and yet the "*Niel*" is the more popular flower. I have never yet seen a list of *Roses* showing which count most; I have seen many lists of those which are most frequently exhibited.

In exhibiting hardy flowers, consider the generally setting up of the bunches, with due regard to the blending or contrasting of colours, consistent with regularity in the height of each row, making as it were as far as possible an inclined plane of the stand; doubtless this is always a consideration with good judges.

If "Inquirer" will take my list, and then take any good trade catalogue, he will get all the information he needs to begin with. His own experience must teach him the rest, combined with that knowledge gained by visiting the shows, comparing the awards, and taking down in order the names of the bunches of the winning stands. Will the Editor of the *Journal* kindly forward to "Inquirer" the catalogue I am sending with these few notes? In it "Inquirer" will find the botanical name, the requisite soil, the colour, and time of flowering, of almost every herbaceous and bulbous plant now grown.—J. A. WILLIAMS.

["Inquirer" sent us his address, but we had no occasion to preserve it. If he sends it again the catalogue shall be forwarded as requested.]



EVENTS OF THE WEEK.—The Committees of the Royal Horticultural Society will meet at the Drill Hall, James' Street, Westminster, on Tuesday, April 10th, when a good display is expected. Special prizes will be offered for Daffodils. At 3 P.M. the Rev. G. H. Engleheart will deliver a lecture on "Hybrid Narcissi." Beyond this and the customary auction sales no other events of horticultural interest are advertised to take place in the metropolis during the ensuing week.

— **THE WEATHER IN LONDON.**—Another week of sunny weather, with occasional slight showers, has been experienced in the south. On Sunday the shade maximum in London was as high as 69°, or about 16° above the average for the time of year. At night the barometer fell slightly, and a thunder shower occurred on Monday afternoon. Tuesday, however, proved bright and warm, but Wednesday opened dull, though at the time of going to press the sun is shining.

— **THE WEATHER IN SCOTLAND.**—Fine weather has continued throughout the past week, the mornings and evenings being occasionally dull, the days uniformly bright and warm. On the 31st ult., and again on the 2nd inst., very slight showers of rain fell, and thunder has been heard in the distance. Sunday was an especially fine day. Tuesday morning was dull, with a cold east wind, but no appearance of any further change in the weather.—B. D., *S. Perthshire*.

— WE read in the *Revue Horticole* that consequent on the disastrous explosion that took place at the warehouses of MESSRS. VILMORIN, ANDRIEUX & Co. of Paris, and which we noticed a few weeks ago, the firm has sent to the "Caisse des Victimes" a donation of 10,000 francs (£400) in the name of the house, and 10,000 francs (£400) in the names of MM. Henry and Maurice Vilmorin.

— WE have received from Signor Guiseppe Gaeta his "CATALOGO SISTEMATICO DELLE SPECIE E VARIETA DI CONIFERE COLTIVATE NEL BOSCO SPERIMENTALE DI MONCIONI." It is a systematic catalogue of the species and varieties of Coniferae cultivated in the experimental plantation of Moncioni. It is an admirable publication, 400 species and varieties being treated of, and it abounds with synonyms in all languages. We commend the book very highly to all who are concerned with the cultivation of the Coniferae.

— **ROYAL HORTICULTURAL SOCIETY'S EXAMINATION IN HORTICULTURE.**—This examination will be held on Tuesday, May 1st, simultaneously in as many different centres in Great Britain and Ireland as circumstances may demand. Intending candidates should at once communicate with the Secretary of the Society, 117, Victoria Street, London, S.W. Isolated students—i.e., those who have not studied in connection with any class, and who may be far away from populous centres—may be examined if they so wish, on the condition that they obtain the services of some competent person, such as a magistrate, clergyman, schoolmaster, who will consent to superintend the examination on the Society's behalf. A small capitation fee of 3s. must be paid by every candidate, in order to partially defray the expenses of the examination.

— **ROYAL BOTANICAL AND HORTICULTURAL SOCIETY OF MANCHESTER.**—Under the auspices of this Society, an exhibition of Roses, Orchids, and groups will be held in the Botanical Gardens, Old Trafford, Manchester, on Friday, the 11th May, to Thursday, the 17th May, inclusive. Exceptionally good prizes are offered, and these should bring forth a grand display. For a collection of Roses in pots, arranged for effect, the prizes are £20 first, £15 second, and £8 third. For a collection of Orchids (amateurs) £30, £20, and £10 are offered as first, second, and third prizes, those in the nurserymen's class being £20, £10, and £5. Handsome sums are also to be given for greenhouse plants and hardy flowers. Mr. Bruce Findlay, Royal Botanical Gardens, Manchester, is the Secretary.

— **GARDENING APPOINTMENT.**—Mr. James Batley, for forty-two years head gardener at Wentworth Castle, Barnsley, the seat of T. F. C. V. Wentworth, Esq., retires with a pension, and is succeeded by his son, who has been with him as foreman.

— **FLOWERS FROM SCILLY.**—On Tuesday, the week before last, no less than 14 tons of flowers were sent to the markets from Scilly, and on the following day 9 tons 6 cwt. Some 32,000 bunches were sent from the gardens of Mr. T. A. Dorrien-Smith at Tresco.

— **DEATH OF MR. GEORGE HARDY.**—With regret we record the death of Mr. George Hardy, which occurred at his residence, Pickering Lodge, Timperley, Cheshire, on Monday, March 26th, at the age of sixty-two years. Mr. Hardy was an enthusiastic cultivator of Orchids, and possessed a magnificent collection of these plants at Pickering Lodge.

— **CHISWICK GARDENERS' MUTUAL IMPROVEMENT ASSOCIATION.**—This Association held its final meeting for the session 1893-4 on Wednesday, March 28th, when Mr. Gingell, Superintendent of Ravenscourt Park, read a paper on "Landscape Gardening." We are informed that part of the balance in hand, with the addition of small subscriptions from the members, amounting to about £2, will be shortly paid by the Association to the Royal Gardeners' Orphan Fund.

— **DAFFODILS AND DRY SUMMERS.**—I have never seen the Daffodils flowering more freely than at present. The common Lent Lily (*N. pseudo-narcissus*) of which there are thousands of bulbs growing in the hedges and woods, have produced much larger blooms this year than common. The same can be said of the common double Daffodil (*N. Telamonius plenus*). The hot and dry summer of last year was favourable to the ripening of the bulbs here in the heavy soil.—E. MOLYNEUX, *Swanmore Park*.

— **THE PRICE OF POTATOES.**—It is reported that the returns of large growers of Potatoes in Scotland during the past winter has by no means been satisfactory. According to the agricultural returns for 1893, however, the average values of Potatoes imported into the United Kingdom have regularly increased from 4s. 6d. per cwt. in the period 1861-65, to 6s. 11d. per cwt. in 1886-90, the latter average being exactly the same in the two years 1891-92. It seems curious that home-grown Potatoes have depreciated in value, whilst the price of imported ones has risen.

— **PIERIS (ANDROMEDA) JAPONICA.**—Anyone requiring a good evergreen shrub for a sheltered position cannot do better than choose this one. The flowers, which are produced with great freedom during the whole of March and early part of April, are pure white, and borne in long drooping racemes from near the tips of the branches. It is a peat-loving plant, and to be seen at its best should be planted in a mass. By introducing Lilies into the bed a decided advantage is gained, as during summer, when the Pieris is out of flower, the bed is enlivened by the flowers of the Lilies, which are shown conspicuously by the groundwork of dark green foliage.—D.

— **LECTURE ON PRIMULAS.**—At the monthly meeting of the National Amateur Gardeners' Association, which took place at the Memorial Hall, Farringdon Street, E.C., on Tuesday evening last, Mr. J. Martin of Reading delivered an able and instructive lecture on Primulas. Mr. T. W. Sanders presided, and there was a good attendance of members. Mr. Martin dealt at some length with the history of the florists' Primula, and detailed his experience of hybridising, subsequently giving information of a cultural character. The lecturer remarked that he had never been able to ascertain the origin of the old Double White Primula, a point that might advantageously be settled. Some plants in bloom were sent by Messrs. Sutton and Sons for illustrating the lecture.

— **EXPERIMENTS WITH POTATOES.**—In the *Journal of Horticulture* for the 22nd ult. a record of experiments on Potato crops and the use of chemical manures is communicated by Mr. G. Harris of the Alnwick Castle Gardens, in which he states that the results, as carried out by him, were 4 tons per acre more than from another experimental field. If this statement refers to the experiments made at Alndyke Farm, Alnwick, last year, I beg to enclose you an extract from the "Alnwick Guardian" of last month giving the results as successfully carried out by the three gentlemen named, and which, you will observe, requires no explanation from me, but points conclusively to the unexceptional results, and certainly the reverse of being 4 tons less than those in Mr. Harris's experiments.—GEO. W. FENDER, *Allerburn, Alnwick*. [The lowest weight obtained as stated in the table sent is at the rate of 15 tons 11 cwt. per acre, and the highest 21 tons 9 cwt., both Magnum Bonums; but nothing is tabulated to account for the difference. The extract is singularly incomplete.]

— **ENGLISH RHUBARB IN AMERICA.**—A remarkable feature in the vegetable market of New York, for a week or two preceding Christmas, was in the shape of several tons of forced Rhubarb, of which it is said that over 10 tons were received from Liverpool.

— **THE "Ceylon Observer,"** reports that at the annual meeting of the Planters' Association, held a short time since, it was resolved "That the Government be asked to arrange for the appointment of an entomologist to be attached to the Colombo Museum."

— **SPIRÆA ARGUTA.**—The branches of this Spiræa are somewhat wiry, and by their charming drooping habit show off to the best advantage the profusion of pure white flowers which are produced during April on the previous season's growth. An additional attraction is given this plant by the flower buds, these being of a pretty pink colour. This species is of easy cultivation, thriving in a diversity of soils. Propagation can be effected by means of cuttings of half-ripened wood placed in a close frame.—D.

— **BORING OF FLOWERS BY HUMBLE BEES.**—A large number of flowers are bored, as it is believed, by humble bees. They collect the nectar in this way, instead of entering by the mouth of the flower. Dr. J. Schneck of Mt. Carmel, Ills., a most observing botanist, says "Meehan's Monthly," believes these are not humble bees, members of the genus *Bombus*, but belong to the genus *Xylocopa*, popularly known as borers, or carpenter bees. He has certainly seen these creatures slitting the tubes of Clover, and humble bees entering the mouth in the legitimate way.

— **THREE EARLY GOOD BROCCOLI.**—I am at the present time cutting splendid heads of Veitch's Spring White and Early Penzance Broccoli. The first named is very distinct and valuable, the heads snow white, of a good size, and well protected. Early Penzance succeeds it and is affording beautiful heads. Maincrop will follow. We have about 1000 of the three varieties, planted in the open quarters from seed sown last May, the soil being drawn to the stems ridge fashion in due course; and although we registered 33° of frost, we have not lost any plants. Other sorts of Broccoli looking well are Leamington, Knight's Protecting, Model, and Chelsea Favourite.—JOHN CHINNERY.

— **FLOWERS AND BEES.**—Out of many thousands of Snowdrops I do not see a single seed pod, the inclement weather having prevented bees visiting the flowers. A Wallflower indoors does not show a fertilised pod; a spider has so interwoven its webs about the plant that insects have a poor chance of reaching the flowers, surely proof that bees are in many cases necessary for the fructification of plants. The question is attracting considerable attention at present, and plans are advised as test cases to prove or disprove the usefulness of bees in relation to flowers. One of the methods is to cover the flowers with netting. A much better plan is to have a rim of wire cloth covered with glass. The rays of the sun are essential towards pollenisation, and to obscure plants from the direct rays of the sun is courting defeat.—T.

— **ONIONS AND CARROTS.**—An old custom advocated by old-fashioned gardeners was to sow Onions and Carrots together, a "mixture" of the two as a preventive of the maggots peculiar to each, perhaps on the principle that the villainous marauders, whilst seeking what they might devour, might devour each other like the historical Kilkenny cats. The results I obtained on one trial did not prove much; though the Onions came all right, the Carrots went all wrong. The latter have always proved the most difficult crop with me, and are of but little less importance than Onions. Perhaps I did not allow the right proportion of Onions and its maggots to the Carrots and its wireworms, so that by sheer force of numbers the latter predominated. Has anyone experience of this old plan?—E. K.

— **PREVENTING IMPORTATIONS OF INJURIOUS INSECTS.**—From a note in "Insect Life" it appears that attempts are being made to introduce an effective system of quarantine against injurious insects in California. The State is now importing fruits, trees, shrubs, plants, and seeds from Europe, Australia, China, Japan, South Sea Islands, South and Central America, and other localities, and hardly a vessel arrives at its ports which does not bring such objects, many of which are infested with some insect or fungus pest. "Nature" says that at the Cape of Good Hope a quarantine law is in operation giving the Governor the power to provide by proclamation for protection against the importation and spread of pests, and providing a heavy penalty for its contravention. It is proposed to adopt similar legislation in California, and if the State succeeds in making its measures in this direction effective, its example will in all probability be widely followed.

— **CARDIFF HORTICULTURAL SOCIETY.**—The sixth annual Show of this Society will be held in the Sophia Gardens, Cardiff, by permission of the Marquess of Bute, K.T., on August 15th and 16th. A liberal schedule has been prepared, about £250 being offered in prizes. Mr. H. Gillett, 66, Woodville Road, Cardiff, is the Secretary.

— **HORTICULTURAL CONGRESS AT PARIS.**—We are informed that the tenth congress organised by the National Horticultural Society of France will be held at Paris during the General Horticultural Exhibition, between May 23rd and 28th. Among the special questions to be discussed are the following:—Chlorophyll in relation to the vigour of cultivated plants; capillarity in relation to the preparation of the soil; the means of promoting the nitrification of nitrogenous substances, and of rendering the nitrogen more readily assimilable.

— **SPIRÆA THUNBERGI.**—Being the foremost of the shrubby Spiræas to open its blossoms, this species is deserving of much more attention than it at the present time receives. The habit of the plant is distinct from any other Spiræa; the leaves are linear, 1 inch in length, and are on somewhat thin graceful branches. The flowers are produced during March and April in great abundance, and being pure white contrast admirably with the bright green of the young foliage. At maturity this Spiræa rarely exceeds 3 feet in height.—D.

— **DAHLIA HENRY PATRICK.**—In "E. M.'s" Dahlia analysis in the *Journal of Horticulture* of March 22nd I notice the above variety is omitted. Whether it is because it is not admissible as a show flower I know not; nevertheless I consider it a most desirable variety. Its pure white, well-formed flowers, which are produced in great abundance, are most beautiful. It has also the recommendation of throwing its flowers well up above the foliage, and it is valuable for many purposes; a variety I would strongly advise anyone to grow.—J. J. CRAVEN.

— **WOOLTON GARDENERS' MUTUAL IMPROVEMENT SOCIETY.**—The last meeting of the session was held on Thursday in the Mechanics Institute. A variety of subjects were discussed, the principal of these being "The Pruning of Roses," and a most profitable evening was spent. Mr. R. Todd, gardener to Holbrook Gaskell, Esq., Woolton Wood, was awarded certificates of merit for a charming collection of Orchid blooms, in all fifty-four varieties. The same exhibitor also showed a good collection of spring flowers in sixty varieties. The meetings throughout the season have been well attended; the library has been of inestimable service; the Secretary, Mr. W. Disley, and the remainder of the officials, are the right people to make a society successful. They contemplate holding an autumn exhibition again this season.—R. P. R.

— **THE CULTIVATION OF FLOWERS.**—The last of a series of eight lectures was one on "The Cultivation of Flowers," given by Dr. Clarke of Yorkshire College, in the Board Schools, Wrenthorpe, on Tuesday evening in last week. The lecturer first of all remarked upon the characteristics of the Potovens soils, which generally he would consider to be loamy—not light, not very strong, but between the two. They were poor in phosphates and lime, and most of them were rich in potash and nitrogen. Soils that were rich in nitrogen, he said, would grow nothing but leaves on our plants. Most of the soils were sour, but the sourness could easily be taken away by using lime, say about a pound of quicklime for each square yard. It was possible to grow flowers with farmyard manure, but they, especially annuals, wanted plenty of potash. The lecturer explained at considerable length the best way of treating soils by means of chemical manuring for the growth of plants, and gave a few useful hints as to the best way of watering plants in pots.

— **EMIGRANTS' INFORMATION OFFICE, 31, Broadway, Westminster, S.W.**—The April circulars of the Emigrants' Information Office and the new annual handbooks with maps, just issued, show the present prospects of emigration. This is the best season in the year for emigrants to seek work in Canada, but it is not so easy as it was formerly for men to get work on farms, unless they are accustomed to ploughing and looking after stock. The Department of Agriculture in Victoria is promoting the establishment of sericulture, and the manufacture of scents from flowers. In Queensland there is no demand for more labour, except for a few ploughmen. In Tasmania there is no demand for more labourers. In Cape Colony the supply of labour is sufficient. A report from Natal states:—"There is no demand for farm labour, but a few white men are kept in some places as overseers of coloured labour. There is a good demand for general female servants and for governesses, but not for dressmakers; while laundresses can make 6s. to 10s. a day, working for themselves."

— PRESENTATION TO A DUNDEE HORTICULTURIST.—On Wednesday evening in last week about sixty horticulturists met in Mr. Straton's rooms, 18, Reform Street, Dundee, and entertained to supper Mr. J. G. Wilkinson, foreman to Messrs. Storrie & Storrie, nurserymen, Dundee, who is leaving the city to take charge of the nurseries of Messrs. Kent & Brydone, Darlington. Mr. Robert Wilkie, President of the Dundee Horticultural Association, presided. During the evening Mr. David Storrie presented Mr. Wilkinson with a handsome copy of Messrs. W. & A. K. Johnston's Royal Atlas, with a beautifully engraved inscription, at same time referring to the esteem in which Mr. Wilkinson is held by his many friends.—J. M. C.

— SOUTH AFRICAN FRUIT.—We learn from the "Cape Times" that "since the commencement of the fruit season close upon 100 tons of fruit have been shipped to England by the Castle and Union Companies' boats. Recent cable advices as to the condition of the fruit on its arrival have been very satisfactory to exporters, and the prices on the London market have been correspondingly gratifying. Most of the fruit is being consigned through the Cape Orchard Company to Mr. George Munro of Covent Garden. The Cape Orchard Company, it will be remembered, secured most of the space in the cool chambers of both lines of steamers, though they are by no means monopolists, as farmers may still ship on their own account. There is abundance of fruit now on the market. Local prices still rule high for all kinds of fruit except Grapes. Large quantities are now being forwarded in the refrigerating cars to Johannesburg, though, as pointed out by a correspondent yesterday, the excessive railway fares from Vereeniging absorb nearly every farthing of profit. As things stand at present, it is cheaper and—always granting that the fruit arrives in marketable condition—pays better to ship to Covent Garden than to send to the Goldfields."

— FRUIT GROWING IN ENGLAND.—According to the official returns for 1893 of the Board of Agriculture there has been "a steady development of the acreage returned as occupied by small fruit of the nature of Strawberries, Raspberries, Gooseberries, and Currants, and it is noteworthy that the increase of this form of culture has been continued in the past year. Minute as the aggregate of such figures appears in comparison with the millions of acres under corn, roots, or grass, it is yet satisfactory to find that the 62,148 acres returned in 1892 have risen to 65,487 in 1893, in the counties of Kent, Essex, Cambridge, Sussex, Gloucester, Norfolk, Hants, and Devon, showing the largest increments under this head in the past season. The total acreage returned as under small fruit in Great Britain has increased from 36,724 acres in 1888, when this heading was first included in the returns, to 65,487 acres, or by nearly 29,000 acres in five years. The extent of orchards may also be alluded to in this connection as again showing a rise of from 208,950 acres to 211,664 acres, the five English counties of Kent, Gloucester, Hereford, Cambridge, and Sussex alone accounting for two-thirds of the year's increase. Of the entire area now under orchards, much more than one-half lies in the contiguous group of counties formed by Devon, Somerset, Gloucester, Worcester, and Hereford."

— RULE-OF-THUMB GARDENING.—"R. M.'s" (page 240) style of controversy is not such as to encourage any intelligent correspondent to run a tilt with him. It looks very much like a case of pouring water on a duck's back, and that is a far milder simile than might well have been employed in this case. I just refer to Mr. Castle's very admirable and all too short paper on Grape culture (page 234) in last week's number as affording admirable evidence of what may be called intelligent as compared with rule-of-thumb practice. No mere adopting of old methods because old, no preaching of cultural doctrines because recognised dogma, but a clear statement of methods borne from good sound experience and observation, with a mind open for the reception of all that is good, come from what source it may. We have had enough of the old forms of sermonising in gardening, and, whilst most desirous of keeping all that is sound, none the less have for old methods or practices no reverence or respect simply because old, no more blind adoption of them because previously practised. We want to see gardeners working intelligently, having sound reasons and understanding them for all they do. That is the reverse of rule-of-thumb practice. No man embarking in a higher profession or vocation can be a success unless he has all the later developments in those walks of life at his fingers' ends. We want to see the same thing operating in gardening. It is not enough that any practice in horticulture should be successful to justify that practice. It is essential that reasons for its adoption should be clearly understood and demonstrated. That may be called the new gardening, but, at any rate, it is not by rule of thumb.—A. D.

— COLLOQUIAL PLANT NAMES.—A Shropshire correspondent writes:—"My son was quite amused in reading in the *Journal of Horticulture* (March 29th) the notes on Colloquial Plant Names; but less pleased on seeing in the "Shrewsbury Chronicle" of Friday last (March 30th) so ignorant a mistake under the heading of Ludlow town as to the name of Lilies. I enclose herewith the cutting from the paper. The *Journal* comes to us as a friendly paper, and I have taken it for many years." [The cutting referred to states the church was decorated with Harem Lilies; a shocking rendering of Arum Lilies (*Richardias*).]

— EARLINESS OF THE SEASON.—A Scottish correspondent writes:—"Since the year 1861 I have kept note of the dates on which leaves have first appeared on certain trees around my house, among others of a common Plane or Sycamore (*Acer pseudo-platanus*), standing in an exposed situation 520 feet above sea level. First leaves appeared on this tree on March 29th. Taking the average of the last thirty-three years I find that the tree as a rule comes into leaf at the end of the third week of April. Last year's first leaves showed on April 8th, and the earliest date in its record is April 3rd, 1871. Thus the tree is this year fully three weeks in advance of its average and five days ahead of its earliest previously recorded date. In this quarter (Selkirk) other trees, shrubs, and flowers are equally far advanced with the Plane in question; and while there is little wisdom in indulging in confident meteorological prediction either in the natural or in the political sphere, surely we may reasonably anticipate for the present year a renewal of last year's favourable summer and autumn weather. In 1888 the tree referred to lagged in its first leaves until May 1st, and in 1891 until May 10th."

— IVY ON CHURCH WALLS.—Climbing plants add much to the beauty of a dwelling house, as also does Ivy to an old church tower; but I think those persons who plant them should first consider what they are about to do. Should climbers be neglected for a few years they exclude from view many fine examples of architecture. The following extract from a local paper will show my meaning. A correspondent writes:—"Rambling about the pretty old church and churchyard of Newtonkyme (Yorks) lately, to see the restoration now almost completed, I noticed that the old 'Ivy-mantel tower' was denuded to some extent of its wealth of Ivy, which had not been pruned for years, and the excessive growth of its shoots had obliterated the belfry windows and other parts of the tower. The removal of this Ivy led to an unexpected discovery. I observed a small shrine or minute window about 18 inches high and 9 across. This weather-beaten masonry consists of a semi-circular arch, built flat with the chancel wall, and is supported by three pieces of dressed stone on each side, and a flat base to the whole. The inside of this niche, arch, or shrine, is filled with rubble which dates, no doubt, from Reformation times or afterwards. The shrine itself seems very antique work, probably the same age as the church, and may have contained a statuette of the patron saint or of the Virgin. This architectural and ecclesiastical curiosity has been buried in vegetation for many years."—J. SNELL, *Grimston Gardens*.

— OXALIS CRENATA AS A VEGETABLE.—A few weeks ago a box of tubers was received by a Covent Garden salesman from the Azores, unaccompanied by any information except that the sender knew they were good eating, and might "take" in England. Not knowing what they were, he sent some to Kew for identification, where they were recognised as the tubers of this *Oxalis*, which has been tried in France as a substitute for the Potato, and which is much esteemed as a vegetable in some countries. The tubers are cylindric, from 2 to 3 inches long, thicker than a man's thumb, marked with numerous eye-like depressions, and coloured externally bright crimson. They are white-fleshed and sweet to the taste when raw. Cooked they were not particularly palatable, possibly because they had not been properly cooked. According to Vilmorin, this is the "Oka" of the Peruvians, and is highly esteemed in Peru and Bolivia, being largely used there. The tubers are acid when first gathered, but by putting them in woollen bags and exposing them to the action of the sun, in a few days they become floury and sweet. The tubers do not swell till late in the season, and they are not dug until after frost has destroyed the tops. They are planted in May in light rich soil in rows 3 feet apart. Two varieties are grown in France, the yellow and the red, and a third variety with white tubers has been raised there. The stems of the plants are fleshy, reddish, prostrate, and the leaves are succulent and trifoliate. It is possible, says Mr. W. Watson in the "Garden and Forest," that this *Oxalis* may yet become a favourite vegetable. It is well worth trying. The tubers are good to look at, which is a point to be considered in a new vegetable.

— THE TOTAL RAINFALL AT ABBOT'S LEIGH, HAYWARD'S HEATH, SUSSEX, for the past month was 1.41 inch, being 0.67 inch below the average. The heaviest fall was 0.31 inch on the 14th. Rain fell on thirteen days. Total for the quarter is 6.17 inches, which is 0.49 inch below the average. The maximum temperature in the shade was 62° on 27th and 31st, the minimum 27° on the 3rd and 18th. Mean maximum 52.8°, mean minimum 35°, mean temperature 43.9°, being 3.4° above the average, and 1° above March of last year.—R. I.

— THE WEATHER IN HERTFORDSHIRE.—Mr. E. Wallis, The Gardens, Hamels Park, Buntingford, Herts, writes:—"The weather during the past month has surpassed any that I can remember during any previous March. There have been sharp frosts at night, but the days for the most part have been of a summer-like nature. Rain fell upon ten days during the past month. Maximum in any twenty-four hours was 0.31 on the 12th; minimum twenty-four hours, 0.02 on the 11th; total during the whole month 1.12, against 0.47 of 1893; ending March, 1893, I had registered 4.92 of rainfall; ending March, 1894, I have registered 4.83. Owing to the very bright weather fruit trees of all kinds are rapidly opening their flowers."

— THE WEATHER IN WALES.—Mr. W. Mabbott, The Gardens, Gwernllwyn House, Dowlais, Glamorgan, writes:—"The following is a record of the weather for the past month. Total rainfall, 4.94 inches; in any twenty-four hours, 1.31 inches on the 12th; minimum, 0.01 on the 6th. Number of days on which rain fell, fifteen. Frost was registered on fourteen days, very sharp from the 16th to the 18th, inclusive, but slight on the other occasions. Number of hours sunshine for the month, 172½. Maximum amount on eight days; minimum, one hour on the 8th and 20th. Very wet up to the 15th, with strong and cold winds. Since then we have had very bright spring weather, with wind from east to south-east. The total rainfall for the past quarter is 17.86 inches; for the same period in 1893, 13.45. Sunshine for the same period, 1894, 245 hours."

— SUMMARY OF METEOROLOGICAL OBSERVATIONS AT HODSOCK PRIORY, WORKSOP, NOTTS, FOR MARCH.—Mean temperature of month, 43.6°. Maximum on the 30th, 66.0°; minimum on the 17th, 23.4°. Maximum in the sun on the 24th, 112.8°; minimum on the grass on the 17th, 14.9°. Mean temperature of air at 9 A.M., 42.1°; mean temperature of soil 1 foot deep, 41.4°. Nights below 32° in shade, fourteen; on grass, twenty-four. Sunshine, total duration in month, 158 hours, or 43 per cent. of possible duration. We had two sunless days. Total rainfall, 0.54 inch; rain fell on ten days. Approximate averages for March:—Mean temperature, 40.8°; sunshine, ninety-eight hours. Rainfall, 1.73. A fine, warm, dry, and bright month, with a good many frosty nights, very similar to last year. For the first ten days we had strong westerly winds, but the latter part of the month has been very calm with foggy mornings. Vegetation forward, but rain wanted.—J. MALLENDER.

— THE WEATHER.—There is a striking similarity between the weather experienced during the past week and that experienced at the same time last year, and this is rapidly giving rise to serious apprehensions as to the possibility of another long drought. Since the middle of last month no appreciable quantity of rain has fallen in any part of the United Kingdom. A speedy change would undoubtedly be welcome, not only in the interests of the farmer, but also for the replenishment of the wells and springs, which are certainly not in a condition to undergo another serious drought. The rainfall of the past winter was unusually frequent, but, so far as England was concerned, the aggregate amount was not large, and in many parts of eastern and midland counties it was actually less than the average. Last month there was a deficiency over nearly the whole kingdom, and again more especially in the eastern parts of England, where the quantity varied from about one-half to about two-thirds of the normal. In many places there has been, in fact, a continued deficiency of rain ever since the long drought of last spring. The temperature registered over England of late has, moreover, been unusually high for the time of year, the thermometer in many cases rising above 65°, and in some instances reaching 70°.

— ARBORICULTURE.—Mr. W. Thomson, Clovenfords, writes to the "Scotsman":—"One of the lessons in arboriculture that the recent gales have taught is that fine picturesque trees are bound to come to grief when exposed to such gales as we had last winter, unless greater precautions are taken and more skill shown in preparing the ground before they are planted, in the act of planting itself, and

their subsequent pruning. As witness what happened last winter at Drummond Castle, near Crieff, where hundreds of very fine Oak and other trees were either blown down or so disfigured by the destruction of their branches as to be no longer ornaments. Anyone who will carefully diagnose such a case—as the writer has done more than once—will find that many of the roots of the trees run along the ground, very near the surface, where the soil most congenial to their extension is situated, in which position their anchorage power, so to speak, is small as compared with what it would have been had said roots been for the greater part from 1 to 2 feet under the surface of the soil. The branches are allowed to extend at their own pleasure till they form great long limbs—very picturesque, and much to be desired, no doubt, but dangerous for their own safety, in the first place, and equally so for the stability of the whole trees. To mitigate, if not completely to avoid, such disastrous consequences, a different system of planting and pruning should be adopted. The foundation of the wall round the parks, after the ground has been well drained, should be laid not less than 3 feet deep, and should be of concrete up to ground level, so that the roots of the trees should not be able to penetrate it. The whole ground in which the trees are to be planted ought to be trenched at least 2 feet deep, the good soil of the surface being placed not less than a foot deep, so as to induce the trees to make all their roots at that depth, and not run along the surface, as they do in most cases when planted in the usual way. This weight of soil over the roots would counteract to a large extent the leverage of the long branches. The branches should have their points cut off when they develop a tendency to take a strong lead. Thus the trees would have more compact heads—not, perhaps, so picturesque, but still handsome, shapely trees, no three or four branches of which would put such a strain on the roots as one that is allowed to ramble on at its own will."



ROYAL HORTICULTURAL SOCIETY'S ORCHID COMMITTEE.

SOME difficulty appears to have arisen in the transaction of business by this body (1) through the encroachments of strangers, (2) through the members of the Committee indulging too much in personal and private conversation at the table. The Council of the Society will do their best to remedy the former difficulty, and trusts to the self-restraint of members to meet the latter objection. We have heard it suggested that the Committees of the Society are growing too large, and according to the law of averages it would be a wonder if there were not in these bodies a few persons who, to use a well understood term, "like to hear themselves talk."

CHYSIS BRACDESCENS.

A FINE specimen of this Chysis (fig. 43) was exhibited by W. C. Walker, Esq., Percy Lodge, Winchmore Hill, N., at the Drill Hall, Westminster, on the 27th ult., and the Orchid Committee of the Royal Horticultural Society considered it worthy of a first-class certificate. It is not a new plant, having been introduced from Mexico more than half a century ago, but it cannot be seen in good condition in every collection. The wax-like flowers are borne in racemes, and are 2 or 3 inches in diameter. The sepals and petals, also the outside of the lip, are white, the inside of the latter yellow, while the front lobe is marked with crimson lines. Chysis bractescens usually blooms during April and May, and in rather a cool dry atmosphere the flowers last for two or three weeks.

REPOTTING DECIDUOUS CALANTHES.

THESE useful Orchids will now be on the move, and should be potted without further delay. There is nothing gained by potting before this time, as until new roots are being produced no water will be required, and the bulbs are better left in the pots in which they have flowered. Many modes of starting Calanthes have been recommended, such as laying the bulbs on sphagnum moss and keeping slightly moist until growth is well advanced, or placing in small pots on bottom heat, afterwards repotting into larger sizes; but the simplest and best way is to place them at once in the pots in which they are intended to flower.

With regard to the size of pots to be used, this will depend on the purpose for which the plants are required. Small plants for

vases may be grown by inserting medium-sized bulbs in 48-pots, or they can be put singly in large 60's; but much better results are attained by placing four large or five medium-sized bulbs in an 8-inch pot, this allowing the compost to be used in a much rougher condition, besides affording additional root room.

Calanthes grow well in a compost consisting of three parts good fresh fibry loam and one part well dried cow manure, to

When new roots are beginning to push only a little water should be given, not enough to saturate the soil; but when they are rooting freely an abundant supply is necessary, also occasional doses of weak soot water.

ONCIDIUM MARSHALLIANUM.

There is no more effective Oncidium in cultivation than this



FIG. 43.—CHYSIS BRACDESCENS.

which has been added a little chopped sphagnum and crock dust or charcoal. This mixture should be used in a fairly moist condition. The drainage must be good, but not excessive, a couple of inches being ample in the largest pots, and less in proportion for the smaller sizes. A few half-inch bones over the crocks are very beneficial. The bulbs ought to be fixed as firmly as possible, with the base a little below the soil, and if the old roots are left a couple of inches in length it will facilitate this.

fine species, and the amount of flower produced by even small plants is remarkable. The spikes are often 2 feet high, branching, and many-flowered. The individual flowers are about 2½ inches across, bright golden yellow, with chocolate markings. *O. Marshallianum* should be grown with the *Odontoglossums*, and will do well if given a rather rough compost and good drainage. It requires plenty of water at the roots and a moist atmosphere with plenty of air while growing.—H. R. R.



ROSE SHOW FIXTURES IN 1894.

- June 26th (Tuesday).—Westminster (R.H.S.).
 „ 27th (Wednesday).—Windsor (N.R.S.).
 „ 28th (Thursday).—Canterbury, Eltham, and Sutton.
 „ 30th (Saturday).—Sittingbourne.
 July 3rd (Tuesday) Farningham and Bagshot.
 „ 4th (Wednesday).—Croydon and Reigate.
 „ 5th (Thursday).—Hereford and Norwich.
 „ 7th (Saturday).—Crystal Palace (N.R.S.).
 „ 10th (Tuesday).—Gloucester and Wolverhampton.*
 „ 11th (Wednesday).—Hitchin.
 „ 12th (Thursday).—Bath, Harleston, Woodbridge, and Worksop.
 „ 17th (Tuesday).—Helensburgh.
 „ 19th (Thursday).—Halifax (N.R.S.), Halesworth, and Trentham.
 „ 21st (Saturday).—Manchester.
 „ 26th (Thursday).—Southwell.

* A Show lasting three days.

Any date of Rose shows, or of other horticultural exhibitions where Roses form a leading feature, not named above, I shall be glad to receive as soon as fixed, for insertion in future lists.—EDWARD MAWLEY, *Rosebank, Berkhamsted, Herts.*

NATIONAL ROSE SOCIETY—THE SILVER CUP FOR SMALL GROWERS.

I FIND that in writing to you about Messrs. Harkness' handsome gift to small growers I inadvertently did an injustice to Mr. Cranston of Kings Acre, Hereford, which I hasten to correct, and regret that even by temporary forgetfulness I should have detracted from the merit of his gift of a 50-guinea cup some sixteen years ago, for which guerdon Mr. Jowitt and Mr. Baker had a memorable struggle, frequently referred to in writings on Rose contests. With this somewhat notable exception my statement stands good that the present cup is the handsomest gift hitherto given, and in this instance the prize is to be solely competed for by small growers. I hope Messrs. Harkness' example may be followed by others. With the re-arrangements made this year in the prize schedules of our Society, with most classes of growers fairly protected, and with several prizes now offered to new members, the N.R.S., if properly displayed, should advance more rapidly than hitherto in public estimation, and the roll of members within the next few years show a marked increase.—CHARLES J. GRAHAME.

ROSE MARECHAL NIEL.

ONE of the best examples of growing this charming Rose that I have seen is at Fair Oak, near Bishopstoke, in Hampshire. Mr. Axford, who cultivates Roses on a large scale for the London market, was formerly a gardener to a gentleman in the neighbourhood. The situation is apparently well chosen, being fairly high and dry as well as having a good exposure. Houses have been built especially adapted to growing Roses in pots, many structures being occupied with *Perle des Jardins*, and Mr. Axford considers this the best Rose for commercial purposes. He adds to his stock of this variety yearly by grafting. Out of 152 plants which I saw but one had failed to grow.

The dimensions of one house in which *Maréchal Niel* Roses are grown are 35 feet long, 16 feet wide, and 9 feet high at the ridge. It is not a large building, but when I say that 200 dozen Roses are annually cut from this one house it cannot be said that the crop is a bad one. The plants are growing on the common Briar, which Mr. Axford considers makes much the best stock for this Rose. The cutting-back system is adopted. Directly the last flowers are cut the branches are pruned back to within a couple of eyes or so of the base, the result being abundance of strong healthy growth. The plants are 4 feet asunder, the growth in the first place having been trained horizontally to the right and left to form the base for future shoots. From these main branches, so to speak, the yearly growth springs at right angles, and extends up the roof on one side and part of the way down the other until the autumn pruning takes place. Many of these growths extend 20 feet in a season. From the base of one plant I counted as many as seventeen growths, which is a plain proof how amenable this Rose is to the free use of the knife.

The soil being sandy in texture abundance of water is required at all seasons to maintain the plants in such excellent health. Not a speck of mildew did I see anywhere, and but very little green fly, so well does Mr. Axford attend to the plants. Tobacco sheets are preferred for keeping the aphides in check. When the plants are in free growth abundance of atmospheric moisture is maintained, and a corresponding supply of air later on to harden and ripen the shoots.—E. MOLYNEUX.

NEW FRENCH ROSES.

THERE must be something very fascinating to the French rosarian in the production of new varieties, but one would hardly have thought that after the many years in which the process has been carried on much profit could attach to it, and yet when we open the list of Messrs.

Ketten Frère of Luxembourg we find that in the three classes of Teas, Hybrid Teas, and Hybrid Perpetuals, no less than seventy-two novelties (?) are offered to us. The thoughts naturally arise, Where do they go? who buys the plants at 25 francs apiece? Not English nurserymen, I think, and certainly not English amateurs.

There was a time, when led away by the glowing descriptions given by their raisers, the trade growers used to order indiscriminately, and then I have no doubt it paid very well, but when they so often burnt their fingers they began to look more to the antecedents of the raiser than to his glowing descriptions. If they found that year after year he had been sending out a number of Roses, and that none of these remained permanently in our catalogues, he politely declined to have anything to do with him, and therefore he began to order only the varieties sent out by those raisers whose previous acquisitions still found favour with him. I suppose that some of the French growers have found this out, for in one of the lists of new Roses sent to me I find that only the initials of the raisers are given, but we are politely informed that if we wish to obtain the names they will be furnished by the firm that sent out the list. Unhappily for him he has not been able to form a corner and to get other growers to follow his example, and so in the list given by Messrs. Ketten the names are to be found in full.

Of the seventy-two novelties offered to us forty-nine are Teas, eight are Hybrid Teas, fifteen Hybrid Perpetuals. Now this in itself is remarkable. There was a time when the Hybrid Perpetuals bore the same proportion to the list as the Teas do now, but seeing that the taste has run the other way, and that the best Hybrid Perpetuals of other years have been those produced in our own islands, our friends across the channel have devoted their attention to the Teas, and left the Hybrids in a vast minority; but what are we to do with forty-nine Teas in one year? And which among them is to exceed or even rival many of those we at present have? Our leading trade grower of Teas, for such I suppose we may call Mr. Geo. Prince, who has been to Lyons, says that there are two or three amongst the new Teas which will be desirable additions, while another has told me that the additions will be neither amongst Teas or Hybrid Perpetuals, but in that mongrel race the Hybrid Teas.

Of these forty-seven new Teas nothing is positively known on this side the channel; there is but little to be gained by our knowledge of the raisers, and we must only therefore trust that some enterprising persons will venture to grow and show them, so that we may be able to see how far the reality agrees with the glowing descriptions of the raisers.—D., *Deal.*

HIMALAYAN RHODODENDRONS.

SIR JOHN Llewelyn sent cut trusses of several varieties of Himalayan Rhododendrons to the Scientific Committee of the Royal Horticultural Society on March 27th, with the following remarks:—"I send up a few trusses of Himalayan Rhododendrons, and have selected six, namely, *Rhododendron barbatum*, which has been in bloom for the past six weeks; *R. Thomsoni*, just commencing; *R. arboreum*, pink variety; *R. Falconeri*, *R. grande*, and *R. Campbelli*. None of my Himalayan Rhododendrons have been injured by the winter, though in the first week of 1894 we had 24° of frost for about a week; and later on, when the Rhododendron blooms were expanding, we had on February 19th and 20th 14° of frost each night, with what effect upon the bloom you may judge for yourself. I should say the plants receive a certain amount of natural protection from adjacent trees, but absolutely none of an artificial nature. Very much advantage and pleasure may be obtained by those who exercise their judgment in distinguishing between the species of these Himalayan Rhododendrons which are being proved hardy in this country, and those which require greenhouse shelter, and, given suitable soil and climate, we may expect to see them more generally grown than appears to have been hitherto the case.

"Where the wood is well ripened in the summer, before the autumn and winter frosts commence, many species will stand the cold with impunity, but the danger arises when the spring frosts recur after the buds have begun to grow. Some are much earlier than others in their leaf action, and run a risk of getting the tender foliage cut off where later sorts escape, and these, of course, cannot be accounted as hardy as the later species. Frost on the expanded bloom may destroy a truss, and yet four or five days later fresh trusses take the place of those injured, for the unexpanded pips resist frost in a wonderful manner. All the blooms now sent have experienced frost, namely, 6° on the 16th, and 7° on March 17th.

"Taking Sir Joseph Hooker's 'Flora of British India' as my guide, and judging from it of the approximate elevations at which the species occur, I should consider that those which grow in their native habitations at 9000 feet or upwards above the sea level will be found to prove hardy enough to thrive out of doors with us. I am trying and proving the following species:—

<i>Rhododendron grande</i>	<i>Rhododendron Griffithianum</i>
" <i>Hodgsoni</i>	" <i>Thomsoni</i>
" <i>Falconeri</i>	" <i>Hookeri</i>
" <i>arboreum</i>	" <i>barbatum</i>
" <i>niveum</i>	" <i>Edgworthi</i>
" <i>campanulatum</i>	" <i>ciliatum</i>
" <i>lanatum</i>	" <i>glaucum</i> , and
" <i>campylocarpum</i>	" <i>cinnabarinum</i>

and there are others I am anxious to obtain and try. Prolonging the season is one advantage, the magnificent foliage for winter decoration

which is afforded by many species is another, while the colours of the bloom of other species are such as no lover of the genus can pass by without admiration."

M. Maurice de Vilmorin stated that these Rhododendrons are usually not hardy in France, but he had met with some in the garden of M. Liats at Cherbourg, and mentioned a fine specimen of *R. Falconeri* on a lawn near Brest.

SIMPLE AND EFFECTIVE FLOWER BEDS.

PREPARATIONS are now being made for the bedding out of the flower garden. The question uppermost in the minds of many gardeners is, perhaps, what must be done in order to have a change from the plans of the previous season. If a change is desired—and one is often needed in flower gardening—let it be made in the right direction. It should lean towards simplicity of design, and to the hardiness and suitability of the necessary plants with which to carry it out. Complications as far as possible in the planting of the borders should be avoided, and harmony amongst colours ought to be aimed at. The blending of colours together so as to be pleasing to the eye is not to be overlooked. To avoid mistakes in this matter it will be wise to employ a limited number of colours, especially in individual beds. Plain beds simply planted generally command the most admiration, because the effect produced by such is greatest. Herbaceous borders and the cultivation of hardy flowers are becoming more general each year because more pleasure is derived from such. If beds of the nature of those just mentioned could be placed in the orthodox flower garden without the innovation being too apparent I think it would be a step in the right direction, and one that would meet with encouragement.

The following are a few examples of some arrangements of borders which may be carried out at a very reasonable cost, and that would give satisfaction to those who may think well to adopt them. A round or oval bed planted with dwarf Dahlias and edged with Violas. One of double Zinnias edged with *Cerastium tomentosum*, white Pansies as a groundwork having small standard Fuchsias planted at 3 feet asunder all over the ground with a bordering of Musk is a very suitable bed. A long half-circular border with a series of round beds, each one enclosed with a band of Ivy planted inside with Henry Jacoby Pelargonium, and the outer space filled in with Gnaphalium, is a telling arrangement, and a few such beds as these mixed in among the others make variety. Heliotropes planted with sweet-scented Pelargoniums in beds and mixed borders of Myrtle, sweet-scented Verbena, Jasmine, Carnations, and other old-fashioned plants make the flower garden what it should be—a great attraction. Masses of colour produced by planting Pelargoniums, Begonias, and Calceolarias are very effective if not carried too far, and I am not advocating their disuse, but a place amongst such flowers as those which I have named above.—GEO. GARNER.

DAFFODILS AT LONG DITTON.

ALTHOUGH five or six years only have elapsed since Messrs. Barr and Son established their Daffodil Nursery at Long Ditton, in Surrey, it has become famous throughout the horticultural world, and enthusiasts from all quarters wend their way thither during March and April. Already this season many devoted pilgrims have paid their annual visit to view the vast expanse of these popular spring flowers and partake of a floral feast that in many respects is unequalled. Others will doubtless do likewise, though the sooner this is done the better, for the golden blossoms are fast expanding under a rising temperature, and it is possible that the earlier and midseason kinds will be past their best in the course of a week or ten days. Later varieties, too, are developing rapidly, and those who are desirous of seeing perhaps the finest collection of Daffodils extant in flower should not delay an anticipated visit. The nursery is easily reached from Waterloo, being about ten minutes walk from Surbiton station on the London and South-Western Railway. Mr. Peter Barr, the respected head of the firm, is away in Spain, searching for novelties, making an endeavour to add to the already priceless floral store, but in his son, Mr. William Barr, an excellent guide may be found.

Thanks to skilful culture and judicious management the drought of last summer seems to have had no perceptible ill effects on the Daffodils at Long Ditton, for the majority of them are flowering splendidly. About two millions of bulbs are grown, these representing, it is said, nearly 500 varieties, of which perhaps a few die out or are discarded to make room for new kinds. Hybridising is, of course, carried on, and Mr. William Barr pointed with justifiable pride to some choice seedlings that he had raised, but which are not yet catalogued. One of these was a magnificent flower of apparently Emperor parentage, and one may safely predict a future for it. Among the Yellow Ajax Daffodils Henry Irving, with its broad perianth and large golden trumpet, stands out conspicuously. Maximus is a grand example of this type, the flower being large and of a rich golden yellow colour, while in Santa Maria we find a variety worthy of more than a passing glance. Many visitors will doubtless stop to admire this beautiful kind, for it can easily be discerned among the thousands of other blooms. It is an early-flowering variety of a distinct and handsome appearance. The perianth is twisted, and the flower throughout is a rich orange yellow. P. R. Barr is another handsome form of the same type, the trumpet of this being rich yellow and the perianth primrose. J. B. M. Camm is a chaste variety with white perianth and cream coloured trumpet, and of

the better known Horsefieldi it need only be said that a large stock is grown. Lady Grosvenor is a distinct form, having a white perianth and sulphur white trumpet, the same to some extent applying to C. W. Cowan, though in the latter variety the trumpet is deeper in colour. William Goldring is a charming Daffodil of the Ajax section. It has a primrose trumpet and long white perianth, and, although a drooping flower, presents a striking appearance. W. P. Milner Mr. Barr considers one of the best sulphur coloured forms, the plant being dwarf in growth and the flowers distinct, and Tortuosus received a similar recommendation. The perianth in this flower is white and twisted, while the trumpet is sulphur coloured passing to white as the bloom matures.

A plot of Sir Watkin of the incomparabilis section was pointed out, with the remark that for boldness of character this variety can well hold its own. As every specialist knows, it is a handsome flower, the perianth rich sulphur, and the deep yellow cup tinted orange. Gloria Mundi, however, is a choicer member of the same group, and when well known will be extensively grown. This is a recent introduction, and is a magnificent flower. The perianth is yellow, while the large cup is well expanded and tinted orange scarlet. Another variety of exceptional merit may be found in Queen Sophia. This belongs to the incomparabilis group, and is very distinct with its sulphur-shaded perianth and large spreading orange scarlet cup. Queen Bess is a beautiful variety of incomparabilis albus, and is one of the earliest of this section; it is characterised by the large white perianth and fine pale yellow cup. With regard to the yellow forms of Narcissus Barri, the variety Conspicuous is perhaps the most distinct with its spreading perianth and broad cup edged orange scarlet. General Murray is an excellent form of Barri albidus, being distinguished by its creamy white perianth and canary yellow cup, which is edged with an orange shade. Flora Wilson, which is another striking variety with a similar cup to the last named, has a pure white perianth, and the flower is extra fine. Among the varieties of Narcissus Leedsii two were noticed as being in specially good condition. These were Beatrice and Minnie Hume. The first-named is one of the purest white Daffodils in cultivation, and the latter is a splendid flower with a canary coloured cup passing to white. Princess Louise of the Burbidgei type is a splendid form, the perianth being white and the expanded cup a deep orange scarlet. John Bain, too, is an extra good variety, the flower presenting a handsome appearance with its large white perianth and citron coloured cup.

The above-mentioned varieties are but a few of the numerous Daffodils that are cultivated at Long Ditton, for there nearly every known type of the genus Narcissus is represented. Many of the dwarf-growing, small-flowered species, such as Cyclamineus, juncifolius, and corbularia are grown in tin boxes without any drainage. Here they flourish amazingly, and it has been suggested that other moisture-loving species may be cultivated similarly. The bulbs of the kinds referred to as growing in the open are planted in beds about 4 feet wide, and the surface of the soil is top-dressed with peat moss litter. This is found to keep it open and friable. During the winter Furze branches are laid on the ground, these breaking the wind and affording sufficient protection for the young growths early in the year.

Although essentially a Daffodil nursery other hardy plants are grown by Messrs. Barr & Son at Long Ditton. Of English Tulips there is a grand collection, the plants promising so well that it is safe to prognosticate a wealth of blossom in due course. The earlier flowering Tulips are also splendidly represented, while of other choice bulbs and perennials there are sufficient to delight the most fastidious hardy plant enthusiast.—C.

POCKET BOOK NOTES.

THE words of golden wisdom in "Lessons for Young Gardeners" in the *Journal of Horticulture* (page 233) ought to be read and well digested by every young gardener in the kingdom. Get as much theory as you can, but do not despise practical hard work, and of all things use your eyes and brains; that is the lesson young gardeners should learn. "C." has done well by emphasising these things.

The common sense views of Mr. Stephen Castle "About Vines" (page 234) comes with refreshment and encouragement to every gardener who has been working his Vines on some such principles as those advocated by Mr. Castle. Personally I thank him.

"Stove and Greenhouse Climbers," from the genial pen of "E. K." on the same page, whose weekly papers are such pleasant reading from the gay wisdom of them and their high literary merit, is practical and very useful.

We all owe you a debt for bringing out so much useful information about the Onion maggot; I am sure we shall all be the better for it.

Practical and useful again are the notes by Mr. H. Dunkin on "Spring Bedding," and the "Propositions on Fruit" (page 236), by Mr. George Cole, are worthy of deep consideration.

The "National Fruit Culture Society" (page 245), proposed by Mr. Rivers, reminds me that his father and our chief were the principal promoters of a Pomological Society some thirty to forty years ago, and which was the parent of the Fruit Committee of the Royal Horticultural Society. The good Doctor could give Mr. Rivers some hints on the subject, I am sure, and an examination of his father's books and papers of say thirty to forty years ago would give him more.

I join with "A. D." in thinking that the R.H.S. is quite capable of doing all that can be done in the matter, and it is always dangerous to divide a large interest into small, independent sections.—N. H. P.



THE NATIONAL CHRYSANTHEMUM SOCIETY'S REPORT AND SCHEDULE.

APART from the satisfactory financial statement of this publication, and the general tone of life and prosperity reflected, also apart from the schedule of prizes, the present issue is particularly interesting as containing valuable papers by Mr. C. E. Pearson and Mr. C. E. Shea, with the instructive discussions thereupon. Mr. Pearson sought, very commendably and ably, to "Improve Chrysanthemum Shows;" and Mr. Shea endeavoured not less commendably and ably to evolve some definite "Canons of Judging." Great subjects, both of them, and, as the discussion showed, such as cannot be settled in one meeting.

ARRANGING CHRYSANTHEMUMS.

Mr. Pearson first referred to cut blooms, and while admitting the convenience of the present system for comparing their merits, condemned the "dabs of colour in long lines as most repulsive to anyone with the least artistic taste." Evidently our friend felt the "strength" of the custom as indicated by the strength of his language. He would like to have the blooms shown with visible leafy stems. Classes for such exhibits have been tried at some shows, but the competition did not lead to an extension of them—at least, of incurved blooms; nor did visitors crowd around them after being repulsed by the long lines of splendid specimens of culture staged in the orthodox way.

Formality is of the very essence of highly developed incurved Chrysanthemums, and although Mr. Pearson objects to their precision in arrangement, as reminding of "bricks in a wall," or "soldiers on parade," does he think the wall would look better if the bricks were arranged in picturesque irregularity, or a regimental review be more imposing if the men moved about in delightful disorder? Is there not beauty in appropriateness to the purpose in view—a type of beauty, though it may be in conflict with the ideal of persons who have such an abhorrence of straight lines that it is a wonder they do not have their vest buttons in gracefully curved rows, or dotted here and there in "refined artistic taste?" As Mr. Wynne said truly, the real Chrysanthemum lover looks for "quality in blooms above all things," and they must be so displayed that their points can be appreciated, not by judges alone, but by visitors who appear to flock in ever increasing numbers to discriminate and admire.

When we pass from the incurved to the Japanese these undoubtedly lend themselves to greater freedom in arrangement, and though the present system is not likely to be discontinued, a great addition, or as great as space allows, might be made to the beauty of exhibitions by having classes in which handsome blooms on leafy stems might be pleasingly disposed for decorative effect, according to methods that have been tried or which might be devised by persons not having the "least" but the "most artistic sense."

GROUPING CHRYSANTHEMUMS.

Mr. Pearson was on firmer ground when he assailed "groups for effect." Some of them can only come within the conditions by the interposition of a qualifying term—"arranged for (bad) effect." The National Chrysanthemum Society has erred grievously in the example set by prize groups at its shows. They have been a burlesque on big, flat, packed, insipid, and wholly tasteless bouquets. Some of the worst "groups for effect" in the kingdom have been "arranged" in the Westminster Aquarium. Not all the worst be it understood, because in numbers of shows dirty pots and naked stems have stood out obtrusively. Yet, where there are large blooms, hoisted from 4 to 8 feet above the pots, such groups "for effect" must have first prizes, because, forsooth, of "quality of blooms." Mr. Pearson's epithet, "hideous abominations," is hardly too strong in this reference.

Superiority, or "quality" of blooms, is not in the least incompatible with other essential requisites—taste in arrangement, a plenitude of healthy foliage, and the absence of anything unpleasing, whether of unclean pots, staring sticks, or offensive wires supplanting Nature's grace by a harsh, clumsy artificiality. A fringe of small plants for hiding the large pots, and a few plants interspersed as a foil to splendidly grown Chrysanthemums may, in good hands, produce an effect that Chrysanthemums alone cannot equal. One or two of such groups at the Hull shows have far exceeded in beauty any that have been arranged in London or even at the Crystal Palace. Yet now and then, at different shows, groups of Chrysanthemums solely have displayed both high culture and tasteful arrangement in a most satisfactory way. As Mr. Stevens suggests, let us have both kinds of groups where there is room for them, and money enough for prizes to bring out the best, for there is assuredly room for improvement.

Mr. Pearson's trenchant remarks will be productive of great good, and he had reason to be satisfied with the excellent discussion that followed on the reading of his suggestive paper. We will refer to Mr. Shea's analytical contribution on judging blooms on a future occasion; in the meantime all Chrysanthemum growers and judges should read his paper, also Mr. Pearson's, in the N.C.S. report and schedule just issued.—W.

MRS. ALPHEUS HARDY.

Two seasons ago I put some half-dozen plants of this variety to the wall, where, proverbially, weak ones must go, with better results than I have obtained from them in any other position. In an open space between two Pear trees the pots were stood on a board and the stems secured by shreds and nails; they also had more than an ordinary share of the syringe.

Apropos of purity of colour, which Mr. Rainbow speaks of on page 224, I think it deserves all he says for it, and more also; there is a lustrous whiteness about it absent in any other white, however pure. Delightfully uncertain as is this charming variety, a good flower on an exhibition board speaks volumes for the grower. Of the so-called ostrich plume varieties, it appears to be the one most worthy of the name. How misleading are some catalogue descriptions—viz., "the pink Mrs. Hardy," and "the yellow Mrs. Hardy." Doubtless true sports with clear, bright colours would be as beautiful as the original; yet owing to the "miffy" character one should, perhaps, rest content with the unique original.—E. K.

FERTILISING CUCUMBER BLOOMS.

As this is the time of the year when many persons will be engaged in the cultivation of Cucumbers perhaps a few remarks on the fertilisation of the flowers may not be out of place in the *Journal of Horticulture*. This is a practice in which there is a diversity of opinion, some growers thinking it necessary to fertilise the blooms for the production of good fruit, while others have opinions the reverse of this.

Early last summer I was shown some very good Cucumbers, the grower remarking that he always made it a practice to fertilise the flowers, and attributed his success to this fact, though as far as my experience teaches me he was wrong, and the small deformed fruit we sometimes see are not caused by imperfect or non-fertilisation, as some seem to think, but by other reasons perhaps rather difficult to account for. Sometimes in training the plants or in watering the small fruit may get bruised while young and tender, and so prevent it swelling properly. A low and too moist temperature with too much water at the roots is also, I believe, another cause of deformed fruit.

We fertilise flowers to induce them to produce fertile seed, but to produce good Cucumbers for the table they should contain no seed, and owners who do fertilise their Cucumber blooms will find that not one in fifty will contain any seed at all; so the question naturally arises, Does fertilisation have any other effect upon the fruit than producing fertile seed?

In the case of many fruits fertilisation is advantageous, resulting in finer specimens; especially is this noticeable with stone fruit, such as the Peach or Nectarine—in fact, these will not swell if not properly fertilised, and in this case, as well as fertile seed being produced, the fleshy or edible part of the fruit is improved. This can easily be seen by examining deformed fruit that swell on one side only. On dissection the seeds will nearly always be defective on the imperfect side, but good on the other.

With the Cucumber it is very different. It should be all flesh, with no seeds, as everyone knows who is fond of eating them, and the quality of the fruit does not depend upon fertilisation, but upon the soil they are grown in and the atmospheric conditions they are subjected to, so I maintain that so far as the Cucumber is concerned, fertilising the blooms is an erroneous practice and a waste of time. I used to resort to the practice until experience told me it was wrong. All staminate blooms should be removed as soon as they appear, so that all the energies of the plant may be directed to the formation of fruit. This is more necessary on plants that are forced early, during the dull cold days of winter and early spring. Perhaps other readers of the *Journal* will give their opinions.—J. S. UPEX, *Wigganthurpe, York*.

WATERING IN THE SPRING.

DROUGHT in the spring has many advantages, more especially when it follows on a season of much rain; but its disadvantages will be uppermost in the mind of those who are still engaged in carrying out ground alterations or in planting. I believe the success of newly planted trees and shrubs is not unfrequently marred by a term of dry weather at this time of the year. If the planting has been finished in the autumn the danger is not so great; but if, as generally happens, it has been continued during the winter and spring the chance is that the trees or shrubs may be seriously damaged before steps are taken to protect them from the effects of dryness.

I know that the application of water to newly planted shrubs and trees is looked upon as an evil, but in dry soils it is impossible to get them to thrive without the aid of water. What I wish to emphasise now is this. Instead of waiting until the roots and the soil become dry it is better in all ways to water before that acute stage has been reached. For one thing less water will be needed, and, indeed, it is just as well at this early season to give no more than is necessary. Above all, however, it will secure the plants against suffering from dryness and enable the rooting process to proceed unchecked, and as a consequence save watering in the future, when it is perhaps less wanted.

In the case of good-sized fruit trees transplanted in the autumn, and now rapidly approaching the blossoming stage, the benefit of water applied at this time is great. These trees, if they have been properly

managed, have an infinite number of fine roots congregated in a comparatively small bulk. Judging from trees I have transplanted at various times, they always flower profusely, and if seen to with water and proper manures they also fruit well in the year of removal. Water just now in their case also will not be lost. Small trees do not, as a rule, want any water; but what I more particularly refer to are trees and shrubs of a good size.

With regard to flowers, these in general are better without water. At this date I plant out Calceolarias, Veronicas, Pentstemons, Chrysanthemums, and Sweet Peas. I have never required to water these. On the other hand, I find it a safe thing to keep an eye on Carnations, and if dry weather occurs to give them water. These plants root very near the surface of the ground, and an occasional supply of water has a most beneficial effect on the health of these popular flowers. Water also wonderfully improves Daffodils. I cultivate a very large number on sunny warm borders, where I find they succeed well if seen to with water. Last year I twice applied water before the time of flowering, but then it was an exceptional season. I notice that the soil is getting dry again this season, and though such early kinds as Sir Watkin and Ard Righ will need none, yet I am sure the later varieties will. Tulips are likewise much benefited by water. I have also watered profusely beds of Fancy Polyanthus in full flower, and always with good effect.—R. P. B.

PRUNUS MYROBALANA ROSEA PLENA.

ATTENTION has of late years been drawn to the beauty of early flowering trees and shrubs, with the result that some of the best are now to be seen in many gardens. There is still, however, much to be done before their merits are universally recognised, and gardeners who are responsible for the embellishment of pleasure grounds will do well to make themselves thoroughly acquainted with the choicest kinds. Those who visited the Drill Hall, Westminster, on the occasion of the Royal Horticultural Society's meeting on the 27th ult. had an opportunity of doing this, for the branches of various early flowering trees and shrubs made a beautiful display. Amongst others were sprays of *Prunus myrobalana rosea plena*. This is a charming form with fragrant, semi-double, rose-coloured blooms. It is quite hardy and flowers in early spring. The illustration (fig. 44), has been prepared from a specimen kindly sent by Mr. W. Paul, Waltham Cross, Herts.

BRIGHTON SPRING SHOW.

APRIL 3RD AND 4TH.

BRIGHT and beautiful was the weather on Tuesday when the Brighton and Sussex "new" Horticultural Society opened its third annual spring Show. Though the exhibits staged were somewhat less in numbers than last year the quality was good throughout. Groups in both the open and amateur classes were very fine, admirable taste being displayed in the arrangement. Azaleas, too, were remarkably well shown, and twelve better Cinerarias than those which were accorded the first prize are rarely seen. Hyacinths, Tulips and Narcissi were staged in fair form, and the same may be said of the Freesias. Space will not allow of details being given of the amateurs' classes, but special mention may well be made of the group of foliage and flowering plants exhibited by Mr. J. Lewis, 37, Preston Road, Brighton. The plants proved excellent treatment and the arrangement reflected the highest credit. Appended is a list of the prizewinners in the principal open classes.

Mr. J. Turner, gardener to Sir Greville Smythe, Wick Hall, Hove, was placed first for a group of miscellaneous flowering and foliage plants arranged for effect in a space not exceeding 60 square feet. This exhibit was a praiseworthy one, the quality of the plants being exceptional, and made up for what was lacking in colour. Palms, Spiræas, Cinerarias, Azaleas, Dracenas, Lachenalias, Deutzias, and Dendrobium nobile were finely utilised amongst others. Mr. Geo. Miles, Victoria Nursery, Dyke Road, was second with a brighter arrangement, including Hyacinths, Callas, Palms, and Ferns; and Mr. E. Meachen, gardener to Mrs. Armstrong, Woodslee, Withdeane, third, with a fair exhibit. Though there were only three entries in the class for a table of bulbous flowering and foliage plants arranged for effect the competition was very keen. Mr. Geo. Miles was accorded the premier position with a charming display, in which Roses, Dendrobiums, Cattleyas, Ferns, and Azaleas were noticeable. The second position was assigned to Mr. J. Turner, who showed Freesias, Lily of the Valley, Hyacinths, Palms, and other plants. The exhibit was, however, not quite bright enough, or it would have run its conqueror much closer. Mr. E. Meachen was again placed third.

For a table of plants open to single-handed gardeners only, Mr. J. Remnant, gardener to J. Sykes, Esq., Carisbrooke, Preston Road, was a good first, with Mr. W. E. Anderson, gardener to S. Cowell, Esq., Melodia, Preston Park Avenue, the only other competitor, second. Mr. W. Jupp, gardener to G. Boulton, Esq., Torfields, Eastbourne, was first for twelve Hyacinths, staging fair specimens, Mr. J. Remnant second, and Mr. G. Hart, gardener to H. Head, Esq., Buckingham, Shoreham, third. For six Hyacinths Mr. F. Rapley, gardener to Miss Visick, St. John's, Withdeane, was first, Mr. W. E. Anderson second, and Mr. J. Gore, florist, Polegate, third. Mr. J. Gore was a good first for twelve

Tulips, followed by Messrs. E. Meachen and J. Remnant in the order of their names. For six Tulips Mr. W. Jupp was first, with Mr. W. E. Anderson and Mr. A. Fry, gardener to C. W. Catt, Esq., 52, Middle Street, Brighton, second and third respectively. In the class for twelve Narcissi Mr. G. Hart was first with Polyanthus varieties splendidly grown, and Mr. C. Cavaye, 33, Western Road, Brighton, second. For six pots of Freesias Messrs. W. Miles & Co., West Brighton Nursery, were first with good examples, Mr. G. Hart being second. Mr. J. Gore was first for twelve pots of Lily of the Valley, Messrs. W. Miles & Co. being second, and Mr. E. Meachen third, each of the exhibits being very creditable.

Lachenalias were finely and extensively shown, there being eight competitors. Mr. A. Kemp, gardener to C. Scrase Dickins, Esq., Coolhurst, Horsham, was first; Mr. G. F. Wickham, gardener to J. Humphrey, Esq., Keymer, a close second, and Mr. G. Hart a good third. Mr. E. Meachen was first for twelve Cyclamens, staging good specimens, with Messrs. W. Miles & Co. second. The latter were first for six



FIG. 44.—PRUNUS MYROBALANA ROSEA PLENA.

Dielytras, Mr. J. Hill being a fair second. For twelve Spiræas Mr. F. Rapley was first with compactly grown and profusely flowered specimens. Mr. Geo. Miles was second. Mr. C. Murrell, gardener to Mrs. McDonald, Manor House, Preston Park, was an easy first for twelve Cinerarias, showing superb specimens carrying finely formed, highly coloured flowers. Messrs. A. Fry and E. Meachen were second and third as named. Messrs. W. Miles & Co., were the only competitors in the class for twelve double Primulas, and were deservedly assigned the premier award. Mr. C. Murrell staged fine plants in the class for twelve Primulas, and was placed first, with Mr. G. F. Wickham second.

There were five competitors in the class for nine greenhouse Azaleas, excellent examples being shown, Messrs. C. Murrell, W. Miles & Co., and E. Meachen taking the awards as named. For six greenhouse Azaleas Mr. G. Sims was first, Mr. C. Murrell a close second, and Mr. B. Lister, gardener to E. A. Wallis, Upper Lewis Road, a poor third. Genistas were finely staged by Mr. G. Sims, who took the first prize, followed by Mr. Head, The Drive Nursery, Hove, and Mr. A. E. Golding, gardener to H. St. George Voules, Esq., Uplands, Dyke Road, as named. Mr. E. Meachen staged six charming Roses and was placed first, Messrs. W. Miles & Co., being second, and Mr. W. E. Anderson, third. Mr. C. Murrell was first for six Arum Lilies with handsome plants, Mr. J. Hill being a good second, and Mr. E. Meachen, third. Mr. C. Cavaye was first for twelve bunches of cut Narcissi, Mr. M. Tourle, gardener to F. Barchard, Esq., Uckfield, being second, and Mr. R. Miller, Southdown Nursery, Shoreham, third.

For a box of cut flowers, twelve varieties, Mr. J. Gore was first, Mr. E. Meachen, second, and Mr. G. Hart, third.

The miscellaneous exhibits were fairly numerous, of excellent quality, and included a handsome group of flowering plants from Messrs. W. Balchin & Son, Hassocks Nurseries; Apples and Pears in grand condition from Messrs. J. Cheal & Sons, Crawley; seeds and Potatoes from Messrs. Tilley Bros., Brighton; horticultural sundries from Messrs. Palmer & Co., Brighton; specimens of art pottery from Messrs. W. Meeds and Co., Burgess Hill; Apples and Grapes from Mr. A. Kemp; charming Roses from Mr. C. Kilmister, Steyning; Stocks from Messrs. W. Miles and Co., and a table of superb plants, including two extraordinary specimens of *Dendrobium nobile*, *Streptocarpus*, and Ferns from Mr. H. C. Prinsep, The Gardens, Buxted Park.



FRUIT FORCING.

Figs.—*Earliest Forced Trees in Pots.*—The fruit of such varieties as Early Violet and St. John's are now showing signs of ripening; syringing must cease, and a lessened supply of water given, or the fruit will be insipid and in danger of decay. A circulation of warm air is necessary for securing well flavoured Figs. The temperature should be 60° to 65° at night, 70° to 75° by day from fire heat, 80° to 85° with sun, advancing 5° to 10° after closing, admitting air or increasing it from 75°, closing at 80° to 85°. Trees swelling their fruit, such as White Marseilles and Brown Turkey, must be well supplied with water and top-dressings of rich compost, continuing to syringe until the fruit show signs of colouring.

Planted-out Trees Started Early in the Year.—Remove superfluous growths, stopping a fair amount of shoots at about the fifth leaf to form spurs, but avoid overcrowding, and attend to tying-in the shoots, allowing space for growth. Surface roots should be encouraged by a mulching of lumpy manure, which will prove beneficial if kept moist both by attracting the roots to the surface and affording nourishment. Liberal supplies of water or liquid manure will be necessary to assist the fruit in swelling satisfactorily. The temperature should be increased to 60° to 65° at night, and in the daytime from 75° to 80° with sun heat. Syringe the trees freely on fine days so as to keep red spider in check, but avoid keeping the foliage wet late in the day.

Cherry House.—If the trees are heavily laden with fruit the demand for nutriment will be greater, as such trees will be less vigorous than those with few fruits, and whilst the former will be benefited by the application of liquid manure, the latter should have clear water. A good soaking of those elements most suited to the trees should be given, and as often as required, to maintain the soil in a thoroughly moist condition. Inside borders are most suitable for trees subjected to early forcing, as they afford a better temperature, more corresponding to that in which the trees are growing, and rendering the progress of the crop more certain and satisfactory, provided due regard be paid to affording the needful supplies of water. Attend to ventilation and temperature, admitting air from 50° and liberally at 65°. Syringe the trees twice a day, and keep the surface of the border damped. When the shoots have made four or five joints they should have the points taken out so as to form spurs, but those required for furnishing the trees ought to be tied in position early, and be carefully trained in their full length. Aphides must be kept under by repeated fumigation, as if they obtain a hold they are not only difficult to exterminate, but spoil the appearance of the fruit.

Pines.—*Suckers or Plants Started Early in March.*—These will now require attention. The pots must be full of roots, but before the plants are root-bound shift them into 10, 11, or 12-inch pots, watering them a day or two previously, so as to have the soil moderately moist when they are potted. Take advantage of the removal of the plants to examine the beds, replenishing them if need be by the addition of fresh tan, mixing it with the old to a depth that will afford the temperature required—viz., 95° at the base of the pots until the roots reach the sides, when 90° is more suitable. Keep the air about such plants well charged with moisture during the time the house is closed, employing no more fire heat than is absolutely necessary to maintain a temperature of 70° to 75° on mild nights. Ventilate slightly at 80°, liberally at 90°, closing with sun heat at 85°, at which time syringe the plants. This treatment will be suitable for fruiting plants, except such as are in bloom, which should not be syringed. Examine the plants twice a week, and water those that require it.

Plants Started into Fruit Early in the Year.—These are fast approaching the flowering period, and will be benefited by an occasional sprinkling at the time the house is closed; but when in flower they must not be so treated. The foliage being as yet tender, it will be desirable in the case of houses with large panes of glass to afford a slight shading for an hour or two in the hottest part of the day for a few weeks until the foliage becomes inured to the sun's influence. When the flowering is over the fruit will advance rapidly if the roots are in good condition, and plentiful supplies of weak liquid manure will

be requisite. Attend to ventilating early in the morning, commencing when the temperature is at 80°, and closing at 85° with sun heat. Keep the atmosphere moist when the house is closed and the bottom heat is steady at 80° to 90°, night temperature 70°, and 75° by day artificially. As the suckers appear, remove all but one to each plant.

Vines.—*Annual System of Early Forcing.*—Vines in pots afford creditable early Grapes, but better results are obtained by planting them out in beds of 3 to 4 feet width, and about 2 feet depth, so as to admit of 6 inches of rubble and a 3-inch layer of old mortar rubbish over it, and 15 inches depth of soil. To carry out the system successfully light, well heated, three-quarter span-roofed structures facing south are necessary. Cut-back Vines forwarded in another structure are the most suitable. They may consist of Black Hamburgh, Foster's Seedling, and Madresfield Court. They should be placed in their fruiting quarters by the early part of May, when the Vines that have fruited are cleared out, fresh soil is placed in the borders or beds, planting those that are to fruit the following year 27 to 30 inches apart. As they will have made considerable progress and be in 12-inch pots turn them out with the ball entire, firming the soil well about them. Turfy loam with the addition of a quart of soot or some other approved fertiliser to each bushel forms a suitable compost. Extra food can be given in top-dressings or in liquid form. The canes being trained about 1 foot from the glass will make short-jointed wood. The laterals should be pinched at every joint of growth, and the cane stopped about 12 inches beyond where it is proposed to shorten it for fruiting, 6 to 7 feet 6 inches length of good cane being ample. Under good management the Vines will make stout canes, and being as much under control as Vines in pots they can be matured so as to be ready for starting by late October or early in November to ripen Grapes in late March or early in April. The root action being considerably extended as compared with Vines in pots the crops are finer.

Grapes Ripening.—As the fruit swells considerably after commencing to colour, inside borders should have a thorough supply of water early on a fine day, ventilating early to allow excessive moisture to escape. With a full crop of early Grapes the Vines are severely taxed, and perfection in colouring is not always attained. Much may be effected by a liberal and constant supply of warm dry air combined with a moderately low night temperature, but 70° to 75° from fire heat and 80° to 85° with sun heat must be well maintained by day. Red spider generally makes its appearance in early forced vineries, and may be kept from spreading if the first attacks are removed with a sponge and softsoapy water. When the attack is general the hot-water pipes should be coated with a mixture of sulphur and skim milk after heating them to 170°. Do not use too much, however, or it will injure the skin of the Grapes.

Succession Houses.—Attend to thinning the bunches and berries. Stop and remove laterals, especially where there is not room for extension, as to allow them to extend considerably, or so as to necessitate large reductions of foliage at one time, results in a check, and may induce shanking at a later period. Afford plentiful supplies of water to inside borders; weakly Vines will be benefited by the application of tepid liquid manure. Vines swelling their fruit should have a moist atmosphere, damping the border and paths two or three times a day, especially at closing time. Syringing the Vines must not be practised after the Grapes are set.

Late Vines.—Disbud and tie out the shoots as they require it. Close the houses early in the afternoon with sun heat, and maintain plenty of atmospheric moisture by frequently damping available surfaces. The Vines are now making rapid progress, and promise well.

Young Vines.—Those planted last spring will now be breaking naturally, and when the buds have grown about half an inch a little fire heat will prove beneficial, especially on cold days. Remove all buds except one at each break, retaining the strongest and crop lightly, but supernumeraries may be weighted with as much fruit as there is a prospect of their bringing to maturity.

THE FLOWER GARDEN.

Tuberous Begonias.—The old tubers should be kept steadily growing till wanted for the flower beds. They ought never to be subjected to much heat, nor see the inside of small flower pots. Start them either in a frame over a nearly exhausted hotbed, or in boxes and deep pans in a warm pit, newly started vinery or Peach house. Use a fairly rich compost, and be careful not to over-water and sour this at the outset. They may be placed rather thickly together, and given more room when growing strongly, or be kept well apart from the first, and all can then be eventually transplanted to the beds with a good ball of soil and roots attached. When the young shoots are about 1 inch in length the tubers may be safely split up into as many pieces as there are well-divided shoots. Surround these divisions with sharp sand and a light loamy compost, place in gentle heat, and water sparingly at first. All will soon develop into strong plants, and do well for the centres of beds, this year's seedlings if need be occupying the front rows. The latter should also be kept out of pots, as they rarely move well from these. When they are getting too large for the pans in which they are thickly pricked out shift them into other pans or boxes, and from these to a bed of soil over a mild hotbed. Gentle rather than a strong dry heat best suits seedlings as well as old plants; shade from bright sunshine also must be afforded.

Bedding Pelargoniums.—When these are shifted from store pots or pans into either small pots singly or into boxes they ought to be kept for a time in a warm house, nothing answering better than a vinery gently forced. If hastened forward now they can be removed

early, and more room be available for tenderer plants accordingly. Tops of old plants having made some slight growth will now root readily. Place them in well-drained pots or pans over and very near to the hot-water pipes, and keep them rather dry till callused. Spring-rooted cuttings of the variegated golden and bronze-leaved varieties are particularly effective when bedded out, the latest-rooted ones soon making a good show.

Old plants that are intended for pot culture for standing on terraces, ought, ere this, to have been cut back, shaking and repotting in fresh loamy soil when they are breaking afresh. Large specimens may be quickly formed by grouping several plants in one large pot. Keep them growing in gentle heat, and stop any shoots that are disposed to take the lead unduly. It is desirable that they continue to grow strongly till turned out of doors. Pick all bloom trusses off, and on no account let the plants be shaded. Ivy-leaf Pelargoniums should be treated much as advised for the Zonals, only in this case the strong young growths must be trained round stakes or over a trellis, and not stopped.

Fuchsias and Heliotropes.—Plants of either Fuchsias or Heliotropes rooted last summer or early in the autumn, and kept growing in gentle heat ever since, might, by pinching and training, be grown into neat specimens for dotting among dwarf bedding plants. Spring-rooted cuttings will be quite good enough for massing. Larger specimens would be the most effective, especially for the centres of beds and for plunging in the turf. Standard Fuchsias are particularly attractive in the centres of Begonia beds, and these could be very quickly formed out of some of the top-heavy pyramids flowered in pots last season. Trim off all the lower shoots so as to have a clear stem, and shorten back the reserved top moderately hard. Pyramids or bush plants of both Fuchsias and Heliotropes ought also to be pruned if not already done and started in gentle heat. All when breaking strongly ought to have their roots shaken nearly clear of the worn out soil and be replaced, after lightly trimming the roots, in pots of the same size or somewhat larger than previously in. Use a moderately rich loamy soil and give them a sprinkling of bonemeal. They must not be placed in a strong dry heat, or the young shoots will soon get hard and wiry, and flowers be scarce accordingly. A warm greenhouse is the best place for them, and the syringe should be freely used. Much may be done towards improving the form and floriferousness by timely stoppings.

Seeds to be sown.—Asters, Stocks, Zinnias, Gaillardias, Dianthus, Phlox Drummondii, and ornamental Grasses may now be sown. A frame over a mild hotbed, sowing the seed in patches on a layer 4 inches thick of fine light soil, and covering with more of the same, is the simplest and best way of raising large numbers of these annuals. If all are allowed room it will be scarcely necessary to prick them out, only in this case all must be planted where they are to flower somewhat early. The seed would germinate quickly and surely if sown in boxes of fine soil and set on or just over the hot-water pipes in newly started vinery or in any other moderately warm position. The plants will then have to be early transferred to frames or pits, and be pricked out in boxes or beds of moderately rich soil. Mice have a great partiality for Aster seed, and should, if possible, be poisoned or trapped before the seed is sown. Covering the boxes or pans with squares of glass would, however, protect the seed from mice and hasten germination.

Various.—Dahlia cuttings should be taken when about 4 inches high, and preferably with a heel, though tops would root if not hollow. Place them singly in thumb pots, and plunge in a brisk bottom heat. If confined in a propagating frame, wipe or dry the glass of this at least once a day or damping may take place. These spring-rooted plants are to be preferred to old roots, especially if they are given one shift after becoming well rooted in the small pots. Seedlings may be either placed singly in 3-inch pots or be pricked out in boxes. They will be strong plants by next June. Before the roots reach far carefully lift seedling Cannas out of the seed pans and place in small pots. Other seedlings will most probably come up if not disturbed when those that first grew are moved. Old clumps may be split into as many pieces as there are well separated shoots. A portion of the old roots should be left with each and all, either placed in boxes or potted off singly. Keep them in a warm house till well rooted. Herbaceous Lobelias are now quite forward enough for similar treatment. Every strong division established in 3-inch or rather larger pots will, if planted in good soil, flower strongly next summer.

Continue to press forward with the propagation of dwarf Lobelias, Ageratums, Verbenas, Heliotropes, Petunias, and similar plants, while yet the young shoots are stout and succulent. The time will soon arrive when they will be difficult to prevent flowering, and be comparatively worthless for propagating purposes. None of the stock plants ought to be subjected to a strong, dry heat, and all should be kept free of insect pests.

THE KITCHEN GARDEN.

Asparagus.—There is every likelihood of active growth commencing early this season, and it also promises to be strong in all cases where the roots were not injuriously affected by the drought of last summer. Those beds heavily dressed with rich manure in the autumn are invariably the latest to start, and there are usually more losses in these than in the case where no mulching of any kind is applied. Where these manurial dressings have been given they ought now to be forked over with a view to getting rid of sticks, stones, or other insoluble matter. The depth should also be reduced, a portion of the top-dressing doing good service when banked over the exposed sides of the beds. A

good length of shoot is desirable, and in order to be certain of this the crowns ought to be covered with not less than 3 inches of fine light soil, decayed manure, leaf soil, sand, and such like. If, therefore, the crowns are very near to the surface, mix a good heap of such materials and apply this after the surface of the bed has been loosened lightly with forks. It is false economy to dig up and crop the alleys between well established Asparagus beds.

Manuring Asparagus Beds.—When the beds are annually heavily dressed with decaying farmyard or stable manure they are apt to become poisoned by it, and in all such cases a dressing of newly slaked lime is a very much-needed corrective. Apply at the rate of two bushels to the square rod, and lightly fork in. Salt is the favourite manure with most cultivators, but it is far from being the best that can be applied where the soil is naturally of a clayey or retentive nature. In particular, ought it to be kept from newly moved plants. On light soils it may safely be used freely now, and again late in May, the surface of the beds being whitened by it. A mixture of equal parts of guano and salt is perhaps the most effective manure for medium and light soils. Apply now at the rate of 6 lbs. to the square rod and repeat the dose late in May. It should be lightly forked into the surface, preferably during showery weather.

Protecting Asparagus.—Very many shoots are spoilt during most seasons by frosts just as they are peeping through the ground. The dressing of fine soil or decayed manure already alluded to would serve to protect the shoots considerably, but if a covering of strawy litter or bracken could also be placed on the beds this would prove an additional protection. When the clumps are grown widely asunder on the French system the protection may well take the form of a mound of fine vegetable mould drawn up over each plant. If blanched stems are desired this moulding up of each plant must be resorted to, and 6 inches of soil will be found none too much. In cutting or twisting off the shoots when required for use this fine soil should be drawn away with the hand and returned immediately afterwards.

Vegetable Marrows.—If a fairly large frame can be given up to these for a few weeks then a start may well be made at once. When, however, only small hand-lights or perhaps nothing but rough protection can be afforded it is a mistake to raise the plants early. Kept in small pots after these are well filled with roots the plants soon become starved, from which state they are very slow in recovering. For frame culture sow seed at once singly in 3-inch or slightly larger pots and place in gentle heat to germinate, while for the rougher methods of culture defer sowing till early in May. In order that there shall be no delay in getting out the plants after they are once ready commence collecting materials for forming into a large bed. Select a sunny spot, preferably in the frame ground, and there wheel all the sweepings, road trimmings, surplus leaves, half-spent manure, and anything else that will steadily decay. Well mixed and built up into a square heap enough heat will be generated to give the plants in the frame set on it a good start. A mound of good loamy soil should be placed in the centre of each light and three or four plants turned out into this. By the time the frame is well filled with haulm no more danger from frosts need be anticipated, and the plants may, therefore, be gradually exposed and be freed of further confinement.

Kidney Beans.—It is yet too early to sow seeds in the open unless protection can be afforded directly the plants are coming through the ground, rough frames or bender and mats and hand-lights all being handy for this purpose. If no protection can be given, then defer sowing till near the end of April. In forcing houses Kidney Beans are apt to fail quickly owing to red spider attacks, and are particularly liable to this when grown in pots. Fairly deep narrow boxes to fit pit walls and shelves in forcing houses are much preferable to pots for Beans during hot weather. Overcrowding is also a mistake. The market grower's plan of giving each plant good room is the best, especially for the later sowings. Pits and frames should also be utilised for the production of Beans. All that is needed is to level over the soil newly cleared of forced Potatoes and to plant this with Beans raised in pots or boxes for the purpose.

Potato Planting.—The weather has been most favourable to the important work of planting Potatoes. It should be proceeded with according as circumstances permit, and the already sprouted sets of early varieties may well be planted last, as these are liable to push through the ground in time to be cut down by frosts. Where Potatoes are planted with strong sprouts attached, mould up as the planting proceeds. The soil should be drawn up in the form of a ridge, straight and evenly over the rows, and the bulk would then be of considerable height before the tops were exposed. If the haulm is crippled before any moulding up takes place the crop is certain to be light, but the recovery is more assured when a good length of stem is protected by soil or other means. It should also be remembered that medium sized whole sets are more certain to give heavy crops than are either small whole or cut tubers.

TRADE CATALOGUES RECEIVED.

W. Cutbush & Son, Highgate Nurseries, London, N.—*Dahlias, Carnations and Begonias.*

M. Cuthbertson, Rothcsay, N.B.—*Pansy Catalogue.*

William Paul & Co., Bridge of Weir, N.B.—*Pansies and Violas.*

W. Paul & Sons, Waltham Cross, Herts.—*New Roses and Florists' Flowers.*

THE BEE-KEEPER.

APIARIAN NOTES.

WE have had a fortnight of fine weather with an average night temperature of 28° to 30° and a day temperature of 63°, and bees are making rapid progress. Notes from the moors speak of an early spring and profuseness of flowers during the summer. Our varieties of Heather during the two weeks' fine weather have made growths half an inch long. A few weeks more of such sunny weather will bring the Heather into fine condition by July, and the early seasons are as a rule the best for bee-keepers.

MOVING BEES.

About this time of the year it sometimes happens that bees have to be moved short distances, and how to do so rightly perplexes the beginner. It is not always the bee-keeper is favoured with the safe alternative of moving them three or four miles away, then bringing them home to their new quarters after the lapse of three or four weeks, or on the other hand to move them at once to their new site with the chance of losing all or nearly all of the flying bees. I have practised the following method successfully, and as it has never been in print it is not generally known:—By driving the bees into an empty hive, then return them; or after quieting the bees transfer them and frames to another hive. Then I remove them to the new site the moment the bees are all inside. It is generally advised to move bees short distances in unpropitious weather, but do nothing of the sort. Let all manipulations be begun and finished in the fine weather.

SPACE OVER THE COMBS.

For some years past the plan of leaving a space over the tops of the frames, either by laying a slab of candy on the tops of frames, or some device, has become common amongst many bee-keepers. The advantage, its advocates say, is that the air is there warmest, and it is done for the purpose of leading the bees to the warm stratum to feed. According to my experience, however, the idea is erroneous. Put bees into a hive during summer with a device on and they would build it up with combs, storing them full of honey. The covering in other respects will be perfect, and the bees in all probability come out strong in the spring after a healthy repose during the winter. An open space over the combs creates a draught by opening up the crown for bees to pass comfortably to feed, and is inconsistent with their nature. Bees do not feed from the top. They begin at the bottom cells, and eat the honey as required to the top. They then travel in a body round the ends or from the under side of the combs to fresh stores, clustering always beneath them, so by their heat keeps the space above the cluster at a high temperature, and the honey warm, consequently in a fit state for consumption. Candy over the frames is a little more consistent, but as objectionable as the other device. To have a hive winter well and be healthy the porous packing ought to rest upon the tops of the frames, not on anything interposed.

A MEETING OF BEE-KEEPERS.

Incidentally there was recently a meeting of bee-keepers in Lanarkshire from four counties, and, as a matter of course, bee husbandry was the chief topic of discussion. One of the gentlemen present undeceived me as to the late Mr. Taylor being the inventor of the bee trap. He informed me he had in his possession a trap, similar in construction to one I described some years ago in the *Journal of Horticulture*, to trap out the drones and allow bees to re-enter the hive. It has the spacing wire and three tongues of brass. It was uncovered lately where it had lain for a certainty one hundred years. I may allude to this appliance again, as well as to other matters. Both a Dumfriesshire and a Dumbartonshire bee-keeper endorsed the opinions of others that the "Lanarkshire" was the coming hive.

Now is a good time to thoroughly clean floors, and bury or burn the *débris*.—A LANARKSHIRE BEE-KEEPER.

GARDENERS' CHARITABLE AND PROVIDENT INSTITUTIONS.

THE GARDENERS' ROYAL BENEVOLENT INSTITUTION.—*Secretary*, Mr. G. J. Ingram, 50, Parliament Street, London, W.C.

UNITED HORTICULTURAL BENEFIT AND PROVIDENT SOCIETY.—*Secretary*, Mr. W. Collins, 9, Martindale Road, Balham, London, S.W.

ROYAL GARDENERS' ORPHAN FUND.—*Secretary*, Mr. A. F. Barron, Royal Horticultural Society's Gardens, Chiswick, London, W.



TO CORRESPONDENTS

*All correspondence should be directed either to "THE EDITOR" or to "THE PUBLISHER." Letters addressed to Dr. Hogg or members of the staff often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post, and we do not undertake to return rejected communications.

Ashes for Tennis Lawn (Somerset).—Most persons consider sifted coal ashes preferable to crushed bricks for placing beneath the turf of a tennis lawn. A layer about 2 inches in thickness will be sufficient.

The "Journal of Horticulture" in France (Journal).—Many copies are sent to France weekly to newsagents from whom they are ordered by customers. No doubt a Boulogne newsagent would, if requested, supply copies, but he might charge a trifle over the published price, as in the case of newspapers generally.

Hyacinths Casting their Flower Spikes (K. H. and J. R. J.).—The flower spikes of the Hyacinths are simply forced from their sockets by the leaf growths, and may be due to the abnormal ripening and consequent hardening of the bulb scales by last season's heat and drought. The mildness of the winter and the early spring would tend to aggravate the evil by accelerating growth and not allowing time for the development of the flower spikes. There is nothing wrong with the bulbs as regards health.

Angelica Culture (B. D. P.).—It grows well in any good soil, but succeeds best in cool and moist situations, so that instead of a south it should be given a north border. It is raised from seed which may be sown now, or preferably in August, or as soon as the seed is ripe. The seed bed should be frequently watered if the weather be dry, also the young plants. If sown in the spring they should be thinned to 2 feet apart every way, allowing them to remain where sown, or if sown in August or September the plants should be planted in March 2 feet apart every way, keeping them free from weeds, and in dry weather affording plenty of water. The stalks will be fit for use in May or June of the following year, when the stems should be cut down so as to keep the plants from flowering and seeding, then they will live for three years, otherwise the plant is a biennial. The preserved Angelica you mention was in all probability grown in England, it being very extensively grown about London many years ago.

Winter Moth on Plums (J. S.).—You should at once obtain some Paris green, in paste form, and mix thoroughly at the rate of quarter of an ounce to 5 gallons of water. The arsenic is held in the water by suspension, and therefore stirring or agitation must be frequent during use. The liquid should be applied with a sprayer in the form of mist and rest on the trees like dew, not passed through a syringe and run off the trees like rain. We only mention a small quantity as you refer to trees under glass, but you can increase the proportions to meet all demands, and as you have the enemy under glass you will probably not have long to wait before seeing it in the open air, and it will be well to be prepared for the unwelcome visitation. Paris green can be had from Messrs. Blundell, Spence & Co., 9, Upper Thames Street, London, and Hull, as has been advertised in our columns. It is a deadly poison, and does not kill the caterpillars immediately by contact, but in eating leaves and blossoms they take the poison at the same time, and do not "last long."

Thuia Lobbi for Screens (Amateur).—Without doubt this is one of the best Conifers for forming ornamental hedges and valuable sheltering screens, though it would be some time before getting tall enough for protecting standard orchard trees. It is very elegant in growth, and retains its bright green colour in the winter. It grows freely in good loamy soil, such as is suitable for fruit trees. One row is sufficient for forming a good screen. We know of a number of trees that were planted 6 feet apart all grown together now forming a beautiful hedge 20 feet high and 8 feet through at the base. The distance for planting depends entirely on the size of the trees and whether a close hedge is desired at once. If a space be allowed between the trees equal to their diameter they will soon touch each other, and every alternate one can then be removed if desired to form another screen, or they can be left and trimmed to form a close hedge. There is some confusion regarding its nomenclature. Its correct name is no doubt *Thuia gigantea*, but the Conifer widely known under this name is *Libocedrus decurrens*; but we think the Conifer you inquire about is sold as *Thuia Lobbi* by most nurserymen.

The Uses of Primula Leaves (Novice).—The following extract from "The Vegetable Kingdom" will corroborate what you have heard in regard to the uses of Primula leaves. "The leaves and root of the common Primrose (*Primula vulgaris*), dried and reduced to powder, cause sneezing when snuffed up the nostrils, and the root itself acts as an emetic. The fresh roots of the Cowslip or Paigle (*P. veris*), smell like Anise and Garlic, and are also sternutatory when dried and reduced to powder. They contain a bitter substance similar to senega, a little amathazine, a yellowish somewhat concrete essential oil with the odour of fennel, malate and phosphate of chalk, pectic acid, and a matter soluble in alcohol. They are a popular remedy as a nervine tonic, and applied as a relief for pains in the joints. In some countries the leaves are used as a salad and pot herb; and they also serve as food for the silkworm before those of the Mulberry have expanded. The flowers are fragrant, and make a pleasant wine, which has the flavour of muscadell, and is said to be sedative, diaphoretic, and soporific; they have also a rough, bitterish taste, with a fine fragrance, which they communicate to water and alcohol; mixed with honey, an agreeable drink is prepared from them in Sweden, and in spring large quantities of the flowers are dried and kept for future use. Vinous liquors impregnated with them, by tincture or maceration, and infusions of them drunk as tea, are supposed to be mildly corroborant, antispasmodic and anodyne. Boerhave and Linnaeus both asserted that they soothe the pain and procure sleep. At Samara in Russia, the young scapes or flower stalks are eaten as an antispasmodic. The leaves of the Auricula (*P. auricula*) are used in the Alps as a remedy for coughs."

Vine Shoots Blackened (J. J.).—The insect with a large head, long body (abdomen), and transparent wings is an Empis fly, and preys on moths, which it catches while on the wing, and retains in the clasp of its long and slender legs, while the proboscis is draining the moth of its life blood. The dark brown and comparatively long insect is the devil's coach horse beetle, which feeds on the larvæ of various ground insects, especially that of the black Vine weevil (*Otiorhynchus sulcatus*). This is your specimen (the smallest and shortest), and the cause of the small holes in the Vine leaves. The remedy for this pest is to lay sheets beneath the Vines in the daytime, and entering the house after dark, with a lantern concealed, shake the Vines sharply, turn on the light, and kill the beetles without delay. It may be useful to sprinkle the border with finely powdered nitrate of soda, at the rate of 2 ozs. per square yard, but it must not be used if the roots are very near (and active) at the surface. The blackened growths, however, are not caused by any of those pests, but are covered with the mycelium of some fungus, which has formed a felt-like coat, and completely robbed the cells of their contents. It appears to be the brown rot of the Grape (*Peronospora viticola*), yet there is little internal mycelia, and no outgrowths whatever, which may be due to the undeveloped condition of the leaves. As the mycelium is external you may heat the hot-water pipes as hot as possible without making the water boil, then close the house, and paint the pipes thinly with sulphur and skim milk, forming a thin cream. The fumes will destroy the mycelium and not injure the Vines, provided the pipes are only kept hot about an hour, and then allowed to gradually cool down to their ordinary temperature. The sulphur may remain on the pipes until the Grapes are setting, when it would be necessary to wash it off thoroughly, as sulphur fumes are likely to cause the berries to rust.

Nodules on Roots of French Bean (W. A. S.).—We failed to find any eelworms in the nodules, the cells of which are quite healthy, perfect in nucleus, and formative granules (protoplasm). They are quite normal, the nitric ferments being active, and the micro-organisms permeating the cellular tissue or individual cells, and thereby fixing the nitrogen gathered by the leaves from the atmosphere. It is general on leguminous plants; indeed, it is difficult to find Peas or Beans without the nitrogenous nodules, these being different from the swellings caused by eelworms, which as a rule do not attack these nodules, not even those of Clover and similar plants, though it (*Tylenchus devastatrix*) fastens on the stems above ground and on the decayed portions of the roots. Zonal Pelargoniums do not naturally form nitrogenous nodules, and the eelworm that infests them is the same as attacks Cucumbers and Tomatoes—viz., *Heterodera radiculicola*, which we regret to say was common on outdoor Tomatoes last year. Your letter is valuable in that you prove from experience that Chrysanthemums are not affected by the same eelworm that infests Cucumbers and Tomatoes. But, unfortunately, *Tylenchus devastatrix* attacks Chrysanthemums, Carnations, and many plants, killing them at the collar or blackening their leaves, and *T. obtusus* is a still worse pest, causing clubbing in Wallflowers, Spinach, and Turnips. The eelworms do not come in rain; they cannot live in carbonised water, as that off chalk, and they are never disassociated with organic remains. In fact, they are animals, and no animal can construct organic out of inorganic substances. They originate from parents, and these are introduced with the soil; more in that containing nitrogenous matter, such as turf and manure, than in virgin soil. The only preventive is to sterilise the soil—that is, deprive it of living organisms which exist in the vegetable remains, or use such mineral substances as will destroy the micro-organisms and render the nitrogenous elements available as food for plants without passing the digestive canal of eelworm.

Names of Plants.—We only undertake to name species of plants, not varieties that have originated from seed and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in firm boxes.

Slightly damp moss, soft green grass or leaves form the best packing, dry wool the worst. Not more than six specimens can be named at once, and the numbers should be visible without untying the ligatures, it being often difficult to separate them when the paper is damp. (*C. H. H.*).—Phaius Wallichii. (*Somerset*).—Gnidia pinifolia. (*J. D. B.*).—Gardenia citriodora. (*H. P.*).—Cypripedium insigne. (*Yorks*).—1, Aubrietia purpurea; 2, Helleborus foetidus; 3, Fritillaria imperialis. (*X. Y. Z.*).—1, Saxifraga Wallacei; 2, Fritillaria meleagris.

COVENT GARDEN MARKET.—APRIL 4TH.

THE holiday week has materially crippled trade, common vegetables being exceptionally low. Grapes finishing early are still rising.

FRUIT.

	s.	d.	s.	d.		s.	d.	s.	d.
Apples, per bushel	2	6	to	9	0	Lemons, case	10	0	to 15 0
„ Nova Scotia, per barrel	12	0	24	0	Peaches, per doz.	0	0	0 0	
Cobs	45	0	0	0	Plums, per half sieve	0	0	0 0	
Grapes per lb.	1	6	4	0	St. Michael Pines, each	2	0	6 0	
					Strawberries per lb.	2	0	6 0	

VEGETABLES.

	s.	d.	s.	d.		s.	d.	s.	d.
Asparagus, per bundle ..	6	0	to	7	0	Mustard and Cress, punnet	0	2	to 0 0
Beans, Kidney, per lb. ..	0	6	1	0	Onions, bushel	3	6	4 0	
Beet, Red, dozen	1	0	0	0	Parsley, dozen bunches ..	2	0	3 0	
Carrots, bunch	0	3	0	4	Parsnips, dozen	1	0	0 0	
Cauliflowers, dozen	1	6	3	0	Potatoes, per cwt.	2	0	4 6	
Celery, bundle	1	0	1	3	Salsafy, bundle	1	0	1 5	
Coleworts, dozen bunches	2	0	4	0	Scorzoneria, bundle	1	6	0 0	
Cucumbers, dozen	2	0	4	0	Seakale, per basket	1	3	1 6	
Endive, dozen	1	3	1	6	Shallots, per lb.	0	3	0 0	
Herbs, bunch	0	3	0	0	Spinach, bushel	1	6	3 0	
Leeks, bunch	0	2	0	0	Tomatoes, per lb.	0	6	0 9	
Lettuce, dozen	0	9	1	0	Turnips, bunch	0	3	0 0	
Mushrooms, punnet	0	9	1	0					

AVERAGE WHOLESALE PRICES.—CUT FLOWERS.

Orchid Blooms in variety.									
	s.	d.	s.	d.		s.	d.	s.	d.
Arum Lilies, 12 blooms ..	1	6	to	3	0	Narciss, White (French),			
Azalea, dozen sprays..	0	6	0	9	dozen bunches..	3	0	to	5
Bouvardias, bunch ..	0	6	1	0	Pelargoniums, 12 bunches	6	0	12	0
Camellias, dozen blooms ..	0	9	2	0	Pelargoniums, scarlet, doz.				
Carnations, 12 blooms ..	1	6	3	0	bunches ..	4	0	6	0
Daffodil or Lent Lily ..	1	6	2	0	Primula (double), dozen				
„ double ..	1	0	2	0	sprays ..	0	6	1	0
„ single ..	2	0	6	0	Primroses, doz. bunches ..	1	0	2	0
Eucharis, dozen ..	2	0	4	0	Pyrethrum, dozen bunches	2	0	4	0
Gardenias, per dozen ..	4	0	6	0	Roses (indoor), dozen ..	1	0	2	0
Hyacinths, dozen spikes ..	2	0	4	0	„ Tea, white, dozen ..	1	0	3	0
Hyacinth, Roman, per					„ Yellow, dozen ..	2	0	4	0
bunch ..	1	6	2	0	Roses (French), per dozen	3	0	6	0
Lilac (French) per bunch	2	6	4	0	Roses, Safrano (English),				
Lilies of the Valley, dozen					per dozen ..	2	0	3	0
sprays ..	0	6	1	0	Roses, Maréchal Neil, per				
Lilium longiflorum, per doz.	3	0	6	0	dozen ..	3	0	6	0
Maidenhair Fern, dozen					Tuberose, 12 blooms..	0	6	1	0
bunches ..	4	0	6	0	Tulips, dozen blooms ..	0	6	1	0
Marguerites, 12 bunches ..	2	0	4	0	Violets, Parme (French),				
Mignonette, 12 bunches ..	3	0	6	0	per bunch..	2	0	3	6
Myosotis or Forget-me-					Violets, Ozar (French), per				
nots, dozen bunches ..	2	0	4	0	bunch ..	2	0	2	6
Narciss, various (French),					Violets (English), dozen				
dozen bunches..	2	0	4	0	bunches ..	0	9	1	0
Orchids, per dozen blooms	1	0	9	0	Wallflowers, doz. bunches..	4	0	6	0

PLANTS IN POTS.

	s.	d.	s.	d.		s.	d.	s.	d.
Arbor Vitæ (golden) dozen	6	0	to	12	0	Ficus elastica, each	1	0	to 7 6
Arum Lilies, per dozen ..	6	0	12	0	Foliage plants, var., each ..	2	0	10 0	
Aspidistra, per dozen ..	18	0	36	0	Genista, per dozen	9	0	15 0	
Aspidistra, specimen plant	5	0	10	6	Hyacinths, per dozen ..	5	0	9 0	
Azaleas, per dozen	24	0	42	0	Lilium Harrissi, per dozen	21	0	30 0	
Cineraria, per dozen	6	0	12	0	Lycopodiums, per dozen ..	3	0	4 0	
Cyclamen, per dozen	9	0	18	0	Marguerite Daisy, dozen ..	6	0	12 0	
Dracæna terminalis, per					Mignonette, per doz...	6	0	10 0	
dozen.. .. .	18	0	42	0	Myrtles, dozen	6	0	9 0	
Dracæna viridis, dozen ..	9	0	24	0	Palms, in var., each	1	0	15 0	
Ericas, per dozen	9	0	24	0	„ (specimens)	21	0	63 0	
Euonymus, var., dozen ..	6	0	18	0	Pelargoniums, per dozen ..	15	0	21 0	
Evergreens, in var., dozen	6	0	24	0	„ scarlet, per doz.	5	0	9 0	
Ferns, in variety, dozen ..	4	0	18	0	Tulips, per dozen	6	0	9 0	
„ (small) per hundred	4	0	8	0					

Roots in variety for planting out, in boxes or by the dozen.



FODDER CROPS.

SUPPLY and demand guide and control the work of every farmer who has grasped the vital principle that self-preservation is the first law of Nature. That being so, the scarcity of hay, the abnormal demand for Oat straw, and the still down-

ward tendency in value of Wheat during the past winter has shown him conclusively that a further curtailment of the Wheat area on his farm is imperative. That Oats are a safe crop he is more and more convinced; safe, because the yield of 80 bushels an acre, which is so entirely possible, means a good profit if the sample is right, and also because he has now realised something of the high feeding value of the straw. If by the light of present and prospective prices it is in any case thought that too much Wheat had been sown last autumn we should have no hesitation whatever in folding off the superfluous acreage, and sowing either Oats or some other useful fodder crop. Far better would it be to do so than to encounter another dreary period of hope deferred—of waiting for a better price for Wheat.

Under the present condition of agriculture we regard Oats as a leading fodder crop, and also as one of the most useful and profitable crops. In usefulness it is perhaps unique, ground Oats being regarded as the best food for fattening pigs and poultry, kibbled or crushed Oats having preference for sustaining condition in horses, cows, store beasts, and sheep, as well as for fattening both sheep and bullocks. As fodder, ordinary Oat straw is superior to the tough, wiry Timothy hay imported from Canada, and the straw of winter Oats harvested early, chaffed, salted, and pressed into a compact mass, as we have so frequently advised, is altogether food of higher value, much more nutritious and palatable.

With such high promise of an early spring as we now have, Italian Rye Grass sown on land in good heart last September bids fair to be ready for a first cut almost as early as Rye. To those graziers who applied the timely advice given them last autumn to sow a field of it, it will now prove invaluable. Under high cultivation it is unrivalled for bulk of crop, but it must be well fed, and though the highest yield has been obtained on sewage farms much may be done by judicious and liberal applications of nitrate of soda. It certainly is a grand fodder crop for an emergency, which will this spring be turned to full account by every sensible farmer. Advantage should be taken of April showers immediately after the first cut to apply the nitrate with a free hand, and a second crop will follow with a degree of rapidity approaching the marvellous. So, too, where sheep are now being folded upon it, there is certain to be a speedy second growth, and what a fodder crop it is for folding! It will carry fully three times the number of sheep that rich permanent pasture will. For bulk of crop, for early growth, for its nutritious fodder and general utility we would have a field of it upon every farm where it is possible, and though the autumn sowings are the most useful a spring sowing made at once will afford much useful fodder this season. The quantity of seed required per acre is 3 bushels. On poor land it does no good; the herbage is yellow, the growth stunted, the crop a failure. It must have rich land, or rather land wherein high fertility is well sustained; it will then during the two years of its existence yield a large quantity of nutritious herbage available for folding, for hay, for several successional mowings of green fodder just as may be required. So generally useful is it that we have long placed it among our indispensable fodder crops.

Let it not be thought that this grass is only cultivated by those farmers having exceptionally good land, such as a deep loam or the best mixed soil. We have had it just as useful on the poor thin soil of the Hastings sand formation in Sussex as upon the rich calcareous Suffolk loams. It is just a question of sound tillage and sustained fertility. For example, we used a full dressing of nitrogenous and mineral chemical manures for it in February, and shall use nitrate of soda only during the summer as we have explained, finishing, if possible,

in autumn with the sheep folds, so managed as to be able to have the sheep off the land early in October if the autumn is exceptionally wet. For cows it affords a late bite throughout the autumn, and is thus alike valuable for late and early growth. Wherever sewage can be had for it the increase in bulk of crop and rapidity of growth is simply marvellous. Knowing this so well we cannot but regard the waste of town sewage as a deplorable act of folly. If only that were turned to account for fodder crops there would be an end of imported hay, of scarcity of fodder in winter, and of the consequent heavy losses among cattle. Clearly in its green and dry fodder requirements Great Britain can be self-supporting and entirely independent of her colonies, even in such a drought as that of last year. The matter is very simple: Turn all the town sewage upon the land, give more prominence to the best fodder crops and thorough cultivation to permanent pasture.

WORK ON THE HOME FARM.

Save all heifer calves that are well bred, and remember that the only way to form and maintain a really good herd of dairy cows is by persistent care in breeding and selection. Give the calves a good start, and keep them in condition by careful feeding and perfect shelter. Too often are they fed well at first, and then so much neglected that some die outright and all of them suffer. A fine healthy calf requires fully three quarts of new milk daily at first; this must be increased to five quarts by the end of the first week, and so on to quite double that quantity by the end of the first month. Then it should be induced to take gruel consisting of skim milk thickened with oatmeal, and be taught to eat a little of the best meadow hay. From the first it is a good plan to use a little condimental food in milk and gruel, to give tone and prevent scouring and indigestion, beginning with a pinch or two and increasing with the quantity of milk or gruel.

Feed frequently, at least three times daily. We are convinced that the common practice of feeding only at morning and evening is the cause of much stomach trouble among young calves. Faint and exhausted from waiting so long for food, when they do get it it is swallowed so hastily that indigestion follows. Often, too, scouring is caused by the use of unwholesome milk. Keep them in a closed snug hovel, opening into a yard with a strip of meadow or paddock outside, into which the calves may run on fine warm days for that nibble of grass which does them so much good. But they must be kept shut in closely on all cold dull days, and always at night. See, too, that the bedding is dry, the floor sound, the drainage perfect. Frequently do we see calves in filthy plight from foul bedding, so foul as to show systematic negligence. This is always a cause of suffering, often of disease, and daily attention to bedding and floor must be insisted upon.

Let equal care be taken of older calves and yearlings, care with the food, shelter, and bedding. Avoid forcing them too fast; on the other hand keep them in fair flesh, that healthy thriving condition which is usually the result of judicious kindly treatment. There should then be no trouble about hoose, no losses from blackleg or quarter-evil. Always let them have access to rock salt, it is also a good plan to use household salt moderately with their mixed diet.

METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude, 111 feet.

DATE.		9 A.M.					IN THE DAY.				Rain.
1894. March.	Barometer at 32°, and Sea Level.	Hygrometer.		Direc- tion of Wind.	Temp. of soil at 1 foot.	Shade Tem- perature.		Radiation Temperature			
		Dry.	Wet.			Max.	Min.	In Sun.	On Grass.		
Sunday .. 25	30.200	deg. 47.9	deg. 44.6	N.E.	deg. 42.8	deg. 59.4	deg. 37.0	deg. 94.6	deg. 31.2	Inchs. —	
Monday .. 26	30.074	deg. 46.6	deg. 43.2	E.	deg. 42.9	deg. 62.6	deg. 34.6	deg. 102.8	deg. 25.8	—	
Tuesday .. 27	30.126	deg. 46.6	deg. 42.7	S.	deg. 42.9	deg. 63.2	deg. 32.1	deg. 92.2	deg. 24.3	—	
Wednesday 28	30.279	deg. 41.1	deg. 39.5	E.	deg. 42.9	deg. 59.3	deg. 33.2	deg. 95.1	deg. 24.2	—	
Thursday .. 29	30.268	deg. 41.2	deg. 40.9	E.	deg. 43.7	deg. 59.4	deg. 39.7	deg. 88.9	deg. 36.6	—	
Friday .. 30	29.951	deg. 48.0	deg. 44.9	E.	deg. 43.9	deg. 64.8	deg. 35.3	deg. 100.4	deg. 2.4	—	
Saturday .. 31	29.771	deg. 55.2	deg. 48.0	S.	deg. 41.6	deg. 65.8	deg. 43.4	deg. 108.8	deg. 34.0	—	
	30.096	deg. 46.7	deg. 43.4		deg. 43.4	deg. 62.1	deg. 36.5	deg. 97.5	deg. 29.2	—	

REMARKS.

- 25th.—Unbroken sunshine throughout.
 26th.—Almost cloudless, but not very clear atmosphere.
 27th.—Almost cloudless, but calm and hazy.
 28th.—Almost cloudless, but hazy in the morning.
 29th.—Overcast and misty early, sun visible through cloud from 11, and sunshine from noon.
 30th.—Unbroken sunshine, but hazy at times, especially at noon; cloudy evening.
 31st.—Fine and sunny throughout.
 Another fine week, rainless (completing an absolute drought of seventeen days), with temperature much above the average, and the maxima equal to the average for the first half of May.—G. J. SYMONS.



"STUNTED" is not a particularly euphonious term, but it has a very definite meaning, as at least it had in a dictionary to which I turned for information in the far-past times when accused of "stunting" at school. "Stunt," it was explained in the book, was "to hinder in growth"—only applicable in my case to hindering the progress in knowledge. Stunted, then, means "hindered from growth," and that is the condition of hundreds if not thousands of fruit trees at this moment, and which consequently need a little manipulative aid.

It is a small matter which will be referred to, or at least that will be the estimate of it by the not inconsiderable section of the community who do not recognise the importance of small things soon enough to prevent important issues of an undesirable character. Fruit trees are now reaching the acme of their spring beauty, as clothed in their silvery pink sheen glistening in the sunshine. How gladdening is the sight! It is a case of blossom, blossom everywhere where fruit trees are established. Old or young it seems much the same, for all seem laden with myriads of flowers, save those that were exhausted by unreasonably heavy crops of fruit last year. "Too soon and too much of it," remarked a cautious old gardener in reference to the blossom, himself like the trees—silvery. "Too much and too soon," he repeated, "to make us sure of a good crop of fruit. Yet we must hope for the best and *do our best*." And the old man was right. Too many, it is feared, let hoping suffice as if they had then done their duty, but it is not so.

"Come and see my wall of cordons," was the invitation of an ardent amateur, "you never saw such a sight; at least, I never did. I had them from Mr. Swagger, who lives over the hill, yonder, and I think if everybody could see them they would get him some orders; don't you? Cheap, too. He bought them at an auction sale, he said, and could let me have them as a bargain, and I think he did, don't you? I only gave 6d. apiece for them, and what a promise of fruit we have!"

I could not conscientiously say "Yes" to either of the interrogatories, so evaded the question by promising to see the trees in fruit—if they bore any. The very suggestion that his precious trees would not be as crowded with fruit in the summer as with blossoms in the spring startled the sanguine enthusiast. He was also startled the more when told it would be better for them, if not agreeable to him, if the blossom fell and left no fruit behind it. That would at least give the trees a chance to grow, for a more miserable set of stunted starvelings it would be difficult to conceive. Cheap at 6d. apiece? They would be dear at half the money, and will never reach the top of the wall as long as it stands. The crowd of weakly blossoms reminded of the last flicker of the candle before the final darkness, and the only crop the trees will bear, the cheap and dirty trees, will be a full crop of scale.

In another garden are also some cordons, two years planted; they were good and creditable trees, obtained from a nurseryman of repute; they were established, and are bearing bold blossoms abundantly; but—and this is the small point to which attention is directed—almost every leader terminated in a cluster of blossom, with the wood buds below quiescent. If this terminal cluster set and the fruits remained, farewell to the desired extension; but

fruit never will set there, for the sufficient reason that the case had only to be explained to gain immediate sanction to the proposed remedy, and every terminal cluster of blossom was cut off to one of the dormant wood buds. Now give the trees some liquid manure; growths will push, and in due time healthy trees will follow if no mistake is made in their management. Root drought and impoverishment greatly prejudice the setting and swelling of fruit.

Was ever such a year of terminal blossom buds seen? The tips of thousands of last year's growths are studded with them. This is of no great consequence when farther extension is not a question of moment, but where it is the ends of the branches should be cut off down to the most promising wood bud. Not to cordon trees only does the injunction apply, but equally so to young, fan, and horizontally trained Pear and other trees, which it is hoped will occupy attractively and profitably the space they were intended to furnish. This they cannot do, or only in the slowest manner, if the chance is not afforded them by the simple practice indicated. How many trees are stunted and wall space consequently unoccupied through non-appreciation of the importance of the apparently small matter of removing terminal blossom buds? Evidence of the oversight, the mistake of allowing them to remain, leaving the trees to struggle as best they may into further extension, is all too clear in many gardens. That there will be extension is not unlikely, but it will be in the wrong place—a crowd of breastwood, while the onward movement of the leading branches lags behind, spoiling the symmetry of the trees, and leaving much space vacant that ought to be occupied in the production of excellent fruit.

As it is with wall trees of various kinds and shapes so it is with bushes, pyramids, and standards. If young, and most of the branches end in blossom, then do the trees become stunted, and so they will in all probability remain if no relief is afforded. Four years ago a farmer planted 500 Apple trees—excellent trees they were, as is apparent by the original growths. They were obtained from one of our best nurserymen, and whether rationally planted or not have been stunted, and so far spoiled by never touching them with the knife. The young branches were not shortened, and only grew an inch or so the first year, some not so much. They became studded with blossom buds, hide-bound, stunted, and stubborn, and are now very little larger than when planted. It is a pity to see such woebegone examples, the result of negligence, ignorance, or timidity in the use of the knife. There is only one way to induce such trees to start into growth, and that is to behead them forthwith to induce the latent buds to break, encouraging the sap movement by liquid support at the roots. It is possible that as a result of the advice thus given, and being carried out, that the trees may yet become useful, but the lost time cannot be regained.

Is the value of liquid manure to over-blossomed and more or less enfeebled fruit trees against walls and in the open sufficiently appreciated? Common it is to see the clouds of blossom fall and scarcely leave a fruit behind it. This is often a cause of exhaustion, and to an important extent is preventible by liquid nourishment at a critical time. If the soil is very dry, as is now the case near many walls, clear water should be first given to moisten it right below the roots, following with the richer fare.

A few years ago a promising looking Cherry tree, promising at least when wreathed with blossom, was a source of great disappointment to its owner. The fruits set and commenced swelling, then turned pale and fell in shoals. He was told next year when the buds were swelling to pierce the ground with a crowbar at distances of 18 inches as far as the branches extended, and pour in liquid manure as fast as it drained away, then fill the apertures with fresh soil, and press it down firmly. This was done, and a splendid crop of fruit rewarded the owner for his pains. The liquid support has been continued, and so have successive crops of

fruit. Many fruit trees there are now of various kinds, shapes, and sizes that need assistance, not a few urgently, in the directions indicated, removing terminal blossom buds promptly by cutting back to the most promising wood buds where extension is desired, and applying nourishment in the most quickly available of all mediums, generous liquid manure.—EXPERIENTIA DOCET.

THE GLADIOLUS IN SCOTLAND.

(Concluded from page 256.)

WITH regard to the hardiness of *G. gandavensis* I am afraid it is hardy only in some favoured localities. It is not so in Scotland. Neither is *G. brecheleyensis* hardy, nor Lemoine's hybrids of the purpureo-auratus section and the Nanceianus varieties. It has been a great disappointment to find these of Lemoine's so tender, as some of the sorts are very beautiful when grown in groups left undisturbed for two or three years. I have found it necessary to treat them in the same manner as the hybrids of *gandavensis*.

A brochure published in 1890 by M. Lemoine affords much interesting information concerning the origin of the different sections of present-day *Gladiolus*. The following extracts relate to *gandavensis*:—" *G. cardinalis* and *floribundus* and . . . *G. psittacinus* or *natalensis*, three most interesting species, the crossing of which gave later the *Gladiolus* known under the name of *gandavensis*." "It was in 1837 that the gardener of the Duc d'Arenberg, named Beddinghaus, formed the idea of fertilising *G. psittacinus* with *cardinalis*." "This *Gladiolus* (*gandavensis*) had the habit and inflorescence of *G. psittacinus*, but in larger proportions; the colours of *G. cardinalis*, but more varied." Louis Van Houtte of Ghent acquired the stock of this new hybrid, and sent it out in 1841 under the name of *G. gandavensis*. For some years I cultivated a number of the type, and found much variety among the plants. To quote again from M. Lemoine:—"Shortly after *G. gandavensis* had been distributed in gardens we are informed that Mr. Cole, gardener to Mr. J. Willmore, Oxford, had crossed this variety with *G. floribundus*, an old species with rosy white flowers. Nearly at the same time M. Suchet of Fontainebleau made some analogous trials." In this case *gandavensis* was crossed with *blandus* and with *ramosus*. "At the same time M. Truffaut, Versailles; Verdier père, Ivry; and Courant, Poissy, attracted notice through the beautiful results which they obtained." That was in 1853.

Few of the varieties raised twenty years later are now worth cultivating alongside the splendid sorts which have appeared of late years, alike in this country and on the Continent. The hybrids of Dean Herbert "sprang from a mixture of *G. cardinalis*, *blandus*, *carneus*, *inflatus*, *angustus*, and *tristis*." In the year 1880 Lemoine distributed two *Gladiolus* which have proved to be the first of a numerous family. These had already attracted attention on account of their beautiful colouration and the unique markings of the flowers. To the best of the two the name of Lemoinei was given. The history of these in brief is this: In 1870 a new species of *Gladiolus* was introduced from Natal. Its name, *purpureo-auratus*, is derived from the light yellow colour of its small flowers and the deep purple blotch in the throat of each of these. In 1875 Lemoine cross-fertilised this species with the best varieties he was able to procure of the *gandavensis* section and three seedlings resulted, two of which, as stated above, were distributed in 1880. What gave an extra attraction to these flowers was the assurance that they were perfectly hardy. There is no reason to doubt that they are hardy in certain localities, but that they are absolutely so is incorrect. I treated the first bulbs I had as hardy plants and lost them. But they are so well worth cultivating that I do not grudge giving them the same treatment as the no less worthy *gandavensis*. For vase furnishing I prefer some of the earlier raised varieties to later kinds. Such as *Lemoinei*, *W. E. Gumbleton*, *Lamartine*, *Sceptre d'Or*, and *Etoile* are most beautiful. In 1890 *Nuée Bleue* appeared, and last autumn many blue-flowered varieties are offered in M. Lemoine's list of new plants.

The Nanceianus section was the result of crossing *G. Saundersi* with varieties of the *purpureo-auratus* group, and *vice versa*. The flowers of these varieties are very large, and some of them most brilliant in colouring. On the other hand, some kinds are not at all attractive. Looking at them from a decorative point of view, *De Candolle* and *A. de la Devansaye* are far ahead of many of the others. I find these are no more hardy than the other sections. It would almost appear that the dry, hot soil of M. Lemoine's nursery at Nancy gives an indication that the requirements of these are in some respects quite different to the needs of *gandavensis*. The latter succeeds best in a somewhat humid atmosphere,

and it cannot bear drought at the root. At Nancy it dies where the others grow and multiply. It is, therefore, quite possible that a hot dry border might be found the most suitable place to grow these in Scotland, and probably also in such a soil they might prove hardy.

Herr Max Leichtlin had procured seedlings from a cross of *G. gandavensis* with *G. Saundersi*, a year previous to M. Lemoine's successful attempt with the latter. M. Lemoine has since heard that the collection containing these seedlings was sold to nurserymen in the United States. Some which he grew appear to have greatly pleased him. Last year a coloured plate was distributed from the United States representing some beautiful *Gladioli*. The name given to these was *G. Childi*. Can these be the ones said to have been sold from Baden-Baden?

It is a curious fact that *Gladioli* are not only difficult to increase in this country, but that many cultivators cannot keep up a stock without purchasing annually. I am aware of instances where fresh corms are bought in every year, and no attempt made to keep the old ones. Where only a few *Gladioli* are grown this system answers very well, as fresh imported corms do so much better than home-grown ones, and 100 or 200 can be now bought very cheaply. Where, however, a large number is required it is certainly worth while to take some care, in order to keep the collection not only in good health, but even to increase it annually. In the cut state the *Gladiolus* is pre-eminent among the flowers of autumn, and as a rule it is not so well cultivated as its merits demand that it should be.—R. P. BROTHERTON.

HARDY FLOWER NOTES.

AS I write, calm and bright days prevail, and the flowers which are open seem to enjoy them as much as we. There is no lack of plants worthy of praise. Pale *Primulas* look brightly out from their allotted places. *Hepaticas*, too, white and red and blue, attest the worthiness of the taste which made them favourites long years ago. Elegant *Snowflakes*, with their pure and handsome flowers, seem to outshine the last of my *Snowdrops*—*Galanthus Gusmusi* and *G. virescens*. *Anemone blanda* unfolds its starry flowers to the sun, and vies in beauty, if not in splendour, with its sister flower *A. coronaria*, of various hues.

The *Crocuses*, which have had such an unhappy time, have sought to atone on sunny days for the many disappointments experienced by a lover of these beautiful flowers. With gold, or purple, or white or streaked cups, they have charmed us with their brilliant beauty. Many times has the writer stood and admired and enjoyed these dazzling flowers, an enjoyment enhanced by seeing and hearing the bees as they dived into these perfect blooms. The *Glory of the Snow* also has given much delight, while other flowers to be afterwards mentioned have brightened the borders and rockeries. But beautiful as all these are, when March and April come the glory of the *Daffodils* seems to overshadow all others; for in what flower have we so much perfection of form and colour? We have to seek the precious metals to express as well as we can the colours of these flowers. And yet "pure gold" seems an unworthy expression to apply to the hue of the yellow *Daffodil*. Can "silver," too, that depreciated metal, fitly describe the pale beauty of such little *Daffodils* as *Narcissus Ajax moschatus*? The combination of "silver and gold" with which we seek to describe *Empress* or *Horsefieldi* is all too weak to praise in fitting terms that harmony of colour we see in these glorious flowers. Fain would the writer say more of the *Daffodil* with its incomparable flowers, delightful alike in woods and glades, or in the border, or on the rockery. It is, however, a flower which can only be worthily dealt with by a specialist, and my collection of somewhere about a hundred kinds, although selected as being typical of the various sections, is too small to drive away one's feeling of diffidence and make one feel confident that more critical remarks would be appreciated. Some day I may have the temerity to speak of the *Daffodil* at greater length; but, meanwhile, with this tribute of homage to this flower we feel constrained to leave to abler pens the pleasure of writing to urge its claims, and pass on to humbler flowers.

Ever welcome in the garden are flowers which give some shade of blue. Few are there without some tinge of purple, but even these are much admired. Among these the *Squills* are becoming more and more appreciated, their earliness, hardiness, and beauty all tending to make them more sought after. One of my favourites is *Scilla bifolia*, which not only gives us the colour desired, but others. In my garden there are now some eight kinds, including the large flowered one from the Bithynian Olympus referred to last month. This form has nearly all the flowers marked with a distinct white stripe on each petal. The typical *S. bifolia*, like many other bulbs, improves much when established, and is very

beautiful. Finer still is the large-flowered *S. bifolia taurica*, which has good flowers, and has red anthers, the large flowered one from Olympus having these of a blue colour. Very pretty and also very distinct is *S. bifolia Whittallii*, with bronzy looking leaves and neat flowers. Another good variety is one sent me as *S. bifolia hybrida*, and which appears to be a hybrid between *S. bifolia* and *S. sibirica*. This has large flowers well exposed to view, and of a good colour. To associate with these, and to give a welcome contrast, we have *S. bifolia rubra*, *S. b. carnea*, and *S. b. alba*. The first of these is very pretty, being of a pink colour, and having also the merit of greater rarity. It is one I have coveted for several years, but, like some other wished-for plants, for several years had to be sacrificed on that altar of economy which demands so many sacrifices from all lovers of flowers. Through the kindness of a generous correspondent I now possess it, and it is needless to say it is highly prized. Pretty too, but perhaps wanting in distinctness, is *S. b. carnea*, of a pale flesh colour, but with so little colour that it is perhaps deceptive to name it *carnea*. Very beautiful is the white variety *S. bifolia alba*, with flowers which I should describe as of an ivory whiteness. Other varieties there are which I have not met with; but enough has been said to give an idea of the variety offered by this species alone. This Squill seems to like a stronger soil than mine, as flowers sent me from some other gardens are of larger size. It thrives well here, but the blooms are smaller.

The Siberian Squill, *S. sibirica*, is so well known that it need hardly be spoken of at length. The white variety *S. s. alba* is, however, comparatively speaking, new, and is worthy of at least a brief notice, not only as a novelty, but on account of its beauty. It appears to have been included in Messrs. Barr & Son's exhibit at the meeting of the Royal Horticultural Society on March 13th. So far as I am aware it has never received special recognition from the Society; but I feel assured that it will be generally appreciated when better known. The form in commerce seems to have originated in Holland, having, it is said, come from the nursery of the late firm of Messrs. A. C. Van Eeden & Co. of Haarlem. The flowers are pure white slightly tinged with green on a portion of the back of the petals when the blooms first open. It was offered at a high price in 1892, but last year it was considerably reduced, and I could not resist the temptation of securing it. It is not always that one does not regret being tempted by new flowers; but in this case the feeling is one of gratification rather than regret. I am aware of at least one private garden in which a white variety of *Scilla sibirica* has appeared from seed, and other varieties of the Siberian Squill as well as of *Scilla bifolia* are in existence and will in time be distributed from the garden of an amateur who has already given us many charming bulbous flowers.

On a sunny rockery facing west, but sheltered from the west winds by the house, is the charming little *Synthyris reniformis*, a North-West American plant. Very pleasing is it with its thickish rather heart or kidney shaped leaves and compact spikes of blue flowers with projecting stamens. It only grows about 6 inches in height in my garden, and is one of the neatest of our rock plants and of perfect hardiness, although preferring in this garden at least a sunny position. It is growing in a free sandy soil, and is never long out of flower. According to the "Dictionary of Gardening" it was introduced in 1885 and is said to be the only species in cultivation. While this may have been the case when the supplement to that work was issued in 1888, there is in cultivation at least one other of the six species of which the genus is said to consist. This is *S. lobatus* which I have seen, but not in flower. I understand, however, that it is inferior to *S. reniformis*, and it does not appear to be so easily grown. It is unfortunate that we do not seem to have an English name for this attractive little plant, the botanical name being unlikely to commend it to many.

There are few plants prettier than *Saxifraga oppositifolia* and the allied *S. pyrenaica* as they hang over the stones of the rockery, covering them with their beautiful flowers. A great favourite of mine is *S. oppositifolia alba*, which is at present covering one of the upper ledges of one of my rockeries with a flat carpet of leaves closely spangled with its small white flowers. It is facing almost due west, an exposure which appears to suit these *Saxifragas* better in my garden than any other. The typical *oppositifolia* with purplish-red flowers and *S. o. splendens* with large and brighter blooms are grown on a rockery facing south, and are not nearly so full of flower. Extremely fine also is *S. pyrenaica superba*, which has larger flowers of a bright crimson purple. This is growing on another rockery with a western exposure, and is thriving admirably.

With very different claims for notice—claims, too, which may be rejected by many, *Cardamine rotundifolia* presents itself upon a rather shady border. Until I grew it myself, and while I was only acquainted with it from a passing glance in visiting another garden every spring, it used to strike me with surprise that the

owner of such a choice collection of plants as grown in his garden should include this among its treasures. It was sent to me about two years ago by a friend at a distance, who desired to know its name, and being unwilling to name it without seeing the flower, this *Cardamine* was planted in an out-of-the-way place. On examining it when in flower this once-despised plant revenged itself for past neglect, as although not a flower of the first rank, it has several qualities which impressed themselves upon one. It blooms early, opening in the north about the beginning of March, has flowers of the purest white, and is bright and cheery looking in all weather. True, it is one of the Crucifers, and the flowers are individually small, but its roundish leaves are bright green, and its spikes of pure white blossoms stand well above the foliage. As may be gathered from what has already been said, it is not a plant which will be appreciated by the visitor to the garden, but is one which must be seen day after day before its merits will be recognised.

We have now few months in the year in which some of the Irises are not in flower, and one comparatively seldom seen is worthy of mention. This is *Iris orchoides*, which has stood the



FIG. 45.—DENDROBIUM SUPERBUM HUTTONI. (See page 282.)

frosts of the last two winters in the open border without any protection and without receiving the slightest injury. It flowered this season on March 8th, and although yellow flowers are plentiful in the Daffodil month a plant with the elegantly formed blossoms of the Fleur de Lis is always received with gladness. The flowers are bright yellow, and the falls in my plant are blotched with a dull purple, but this is not invariably present. *I. orchoides* belongs to the sub-genus *Juno*, and is closely related to *I. caucasica*. My plant grows to about 12 inches in height, but Mr. Baker in his "Handbook of the Iridæ" gives the height as from 12 to 15 inches, and Professor Michael Foster in his "Monograph of the Bulbous Irises," published by the Royal Horticultural Society, says it often attains a height of 2 feet. The foliage is broad and striking, and the whole plant of good appearance. It was figured in the "Botanical Magazine," t. 7111, and is said to have been introduced into cultivation from Turkestan by Dr. Regel. Yet other flowers would claim attention, but one must leave their beauty untold, and only mention briefly the nodding *Fritillarias*, golden *Drabas*, snowy *Arabis*, *Aubrietias* of various shades, the charming little *Iberis stylosa*, which with other flowers attract us to their side to admire the beauty they display.—S. ARNOTT.

TOOL HOUSES AS TELL-TALES.

THE tool house is not the place in which a man's character is usually sought for, but a peep into it reveals a good deal not discernible in letters setting forth honesty, sobriety, and other virtues. Where this useful department is conducted on the hugger-mugger system it is not easy to detect the smart and tidy workman from the sloven—a system, or rather non-system, in which all tools are used indiscriminately, and as indiscriminately tossed into a corner, at "the knell of departing day." This is, of course, the worst aspect of the case; from it there are degrees of excellence leading up to that point where "order—Heaven's first law"—is scrupulously maintained. Of the difficulty in attaining this happy state in the tool house many head gardeners are only too painfully conscious. If this was a matter for no further thought, and could be confined to this part of the garden, the door might be shut, and like

other unpleasant subjects, hid from view. But it cannot be. It is part of a man's character, and as such permeates his work.

Spades that are bright do the best work, and the worker derives a pleasure from it, where others find but drudgery. To such a workman some protection should be given. The untidy workman is often a free trader, who does not scruple to appropriate each morning the tool cleaned by his compatriot the previous night. He does not possess nor understand those finer feelings tending to the dignity of labour. A simple system can reduce chaos to order; encourage the tidy workman, and by the spirit of emulation persuade the other into good habits benefiting all. In the tool house of a well-kept Gloucestershire garden we of the potting shed, off which it opened, would note one spade shining like silver; look at it we might, but touch it, No! "Thuck spaade" was old Edmund's, who, after bell ringing, did not grudge the time spent in grooming it with silver sand, and rubbing it dry.

There is a term used in Ireland, which I think is peculiar to the country—viz., "heart-scalding," denoting the ultra stage of "vexation of the spirit." With a large staff of workmen I was for some time just "heart-scalded" in trying to inculcate a system of order in the tool shed. By a simple arrangement the enigma was solved: Nobody, that mysterious delinquent, who could not be caught, was banished for good and all. For the kitchen garden was appointed ten distinct sets of tools—spade, digging fork, rake, draw hoe, and two Dutch hoes, small and large. To the back wall of the tool house, running the entire length, was fixed two 4-inch laths, one near the roof, the other parallel to it, but midway up the wall; these were painted black. The wall was then spaced off into ten compartments, conspicuously marked on the laths with white paint. Each division was numbered consecutively from one to ten, with the figures boldly painted on the lower laths, on which two hooks held the spade and fork; hooks on the top lath held the long-handled tools. Each set of tools, besides the usual initial branding, was branded back and front with its number, that whichever way they hung "he who ran might read," and a board with the workman's name and number on his tools gave the key to the plan. These were, of course, the tools in general and almost daily use. For those not included in this category, and only occasionally required, each end of the shed was devoted, and to the latter, not so amenable to control, I gave my special protection. The pleasure ground department had its own house and suitable tools.

Bearing in mind that little weakness of humanity pervading each and all of us—the desire for the best of this world's goods—care was taken in the new departure that the men started alike. All tools were of the one pattern, and best quality. The handles while clean were given a coat of hard carriage varnish, which kept them so, and added not a little to the smart appearance of my model tool-house, though I have the misfortune to act as my own trumpeter. I was proud of it; the men shared the feeling, and visitors when escorted through the gardens by members of the family were invariably introduced to it. Did the system work well? Yes, there may at first have been some little persuasion of the vigorous kind, but the spirit of rivalry, which is seldom an evil one, came into the tool-house, and all went happy ever after. I will not say that from the inauguration no further attention was needed. Wear and tear are ever going on. Wear is honest decay; tear, or rather breakage, not always so; but this was reduced to a minimum. I took care that any mishap to the owner of the small property was at once rectified, and the broken tool replaced from a store kept for emergencies.

A young man who was then serving his time with me has since been happily placed at the head of a large gardening establishment, in which he has adopted this plan; and it has given to him the satisfaction it then gave to me. I hope these few remarks may convey some ideas on the subject of an orderly tool-house to a beginner who probably finds in this part of his charge there is room for improvement. If so it will afford me the gratification received from my old pupil that "imitation is the sincerest form of flattery."—E. K., *Dublin*.

ZONAL PELARGONIUMS FOR WINTER FLOWERING.

TAKING into consideration the difficulty experienced by many gardeners in maintaining a supply of cut flowers throughout the winter, it is really astonishing how little attention is given to the preparation of Zonal Pelargoniums for this purpose. The method here advanced is the result of long practice with these plants, and success may confidently be reckoned on by all who adopt it. A good start is essential, and care should be bestowed on the selection of cuttings. No better time could be chosen than the present for their insertion, as this provides them with a long season in which to complete and perfect their growth. The cuttings should be taken from the strongest shoots, which have previously been hardened. If sufficient space can be spared these cuttings should be placed singly in 3-inch pots, using a compost two parts loam, one leaf soil, and one sand, a coating of the latter being placed upon the surface of the soil, so that when the hole is made for the reception of the cutting the bottom will be covered with sand on which it may rest. If placed in a house where a temperature of 60° to 65° is maintained roots will soon be formed.

When the cuttings are rooted remove the point from each one, which will induce the formation of bushy plants, as Zonal Pelargoniums should never be stopped at a joint that has produced a flower, for in almost every instance this will fail to give a break, and at the same time leave an unsightly stump of barren growth. After the plants

have commenced to make side growths remove them to quarters where a free circulation of air is obtainable, and a temperature of 50° to 55°. Here they may remain until it is time to give the final potting; but if during the interval a slight sprinkling of chemical manure be occasionally applied the plants will greatly benefit therefrom. The time of potting will in a great measure depend upon the weather. Should this be favourable the first or second week in June, the operation must not longer be delayed. Six-inch pots are the best, these affording ample space for all requirements. Drainage must be efficient, and made secure by a slight covering of moss, leaves, or the rougher portion of the compost. The soil for the final potting should consist of good fibrous loam, broken with the hand, and not sifted three parts, half-decayed horse droppings one part, a good sprinkling of rough leaf mould, and sufficient coarse sand to render the whole porous.

When potting the plants do not place them too deeply in the pots or make the soil too firm about them. After this operation has been performed they should at once be placed in the quarters provided for their occupation during the summer. Low frames on which the lights can be put if the weather should be inclement provide ideal summer quarters for these plants. A layer of ashes in the frames and pieces of slate or other material on which to stand each pot will complete the arrangement. Throughout the summer the treatment needed is very simple, for besides judicious watering, stopping an occasional strong growth, and pinching out the flower buds as soon as they appear, there is nothing else needed. At intervals a slight sprinkling of chemical manure will be beneficial.

As regards a selection of varieties, no difficulty need be experienced on this point, as any may be chosen from good catalogues. With the housing of these plants, which should not be delayed beyond the beginning of October, their preparation finishes, and the present is scarcely a fit time to go into the treatment required throughout the flowering period and after. Such advice is best left until a nearer approach of the time requiring it, when the writer hopes to have the pleasure of taking up the now dropped thread, and carrying it forward to complete the cycle.—SASSENACH.

BLOSSOMING TIME.

JUDGED from the amount of blossom and buds upon the trees the prospect of a plentiful fruit crop during the present year is a hopeful one. The only exception appears to be Apples. These are most variable; even with the same variety there is a great difference in the amount of blossom buds which trees of one sort are carrying in different parts of the garden and under various conditions. For instance, large trees of Cox's Orange Pippin that bore profusely last year have but a few blossom buds visible now, while small trees that also bore full crops of fruit last season are again well set with fruit buds.

No doubt the restricted rainfall of last year had an injurious effect upon heavily laden trees, rendering them incapable of storing up sufficient nutriment for the formation of a full crop of bloom buds. If such be the case, then it only shows the necessity of thinning the fruit with a view to securing annual crops of good quality. Amongst the generally free-fruited kinds the following sorts are remarkable for the thinness of flower buds:—Betty Geeson, Lane's Prince Albert, Grenadier, Lady Sudeley, Annie Elizabeth, Benoni, Sandringham, Maltster, Lady Henniker, Bramley's Seedling, and young trees of Warner's King. Those promising a full display of blossom are Calville Malingre, Buckingham, Sultan, Stirling Castle, Lord Suffield, Keswick Codlin, Worcester Pearmain, Golden Spire, Bismarck, Hollandbury, Cox's Pomona, Northern Dumpling, Beauty of Kent, and Domino. Warner's King is just the reverse of Cox's Orange Pippin; while small trees of the former are conspicuous by the absence of bloom, trees fifteen years old are well studded with flower buds, although both kinds of trees carried full crops of fruit last year.

Pears appear to be remarkably well prepared to give a full fruit crop. The blossom, too, is opening freely, and is individually of large size, which testifies to the vigour of the trees. Such varieties as Glou Morceau, Jargonelle, Marie Guisse, Winter Nelis, Josephine de Malines, Maréchal de Cour, Duchesse d'Angoulême, and Louise Bonne de Jersey grown as cordons are of extra promise. In the open trees of the following varieties are well laden with blossom—Williams' Bon Chrétien, Beurré Clairgeau, Maréchal de Cour, and Thompson's.

Plums in the open promise remarkably well, while wall trees that gave extra heavy crops of fruit last year are in most cases thinly studded with blossom. A notable instance of this occurs in the case of Coe's Golden Drop, Orleans, and Victoria, all of which are regarded as being sure croppers. Those that promise well are Green Gage, Jefferson, Washington, and Magnum Bonum. Cherries of all sorts are all that could be desired.

Bush fruit of all kinds show extra well for a grand display. Gooseberries I have never seen more promising. In the absence of frost just at a critical moment I should say that the prospect of the fruit crop of 1894 is most reassuring.—E. MOLYNEUX.

THE fruit trees here opened their buds wonderfully early. The Apricots were in full bloom by February 20th, and there is a fair set of fruit. We commenced to protect Peach trees with canvas on the 28th of February. There were a few slight frosts during the time they were in bloom, but no harm has been done; the fruits are now about the size of Peas. Magnum Bonum, Rivers' Early Prolific, Kirks'

Victoria, and Damson Plums have all set their fruit. Most of the Pears are in full bloom, and Apples are commencing to expand their blossoms. Should the weather continue good as it has been for some time longer, we shall have no cause to complain of the fruit crop, for I think it will eclipse 1893.—WM. ROBERTS, Peniarth, Towy, Merioneth.



LIST OF DWARF CHRYSANTHEMUMS WANTED.

WOULD some of your numerous readers who are Chrysanthemum growers kindly name a few of the best dwarf kinds that do not grow more than 2½ feet high, chiefly white, for cutting, not Pompons? We have had lists of sorts that produce large blooms, and now we want the names of varieties which produce an abundance of flowers for cutting for market.—B. J.

CHRYSANTHEMUM MRS. ALPHEUS HARDY.

I WAS much more successful with this variety last season than in previous years, owing I think to two reasons, (1) I noticed a hint in the *Journal of Horticulture* at the commencement of the year that it liked peat, and accordingly added an equal portion of peat to our usual Chrysanthemum soil for this variety; (2) The greater amount of heat and light seemed to suit it, as the plant grew much more healthy; previously it had curled its leaves very much, and looked quite sickly.

Being a weak grower I find 9-inch pots are quite large enough for the strongest plants. It is also beneficial to keep the plants under glass longer than the other varieties if the weather is in any way changeable in the spring. As regards the beauty of the flowers a noted horticulturist in other branches (who is not a Chrysanthemum grower, and in fact does not care for them) on seeing my collection in flower at Ketton last autumn at once singled out the above variety as the best of all, and begged some cuttings. I quite agree with his taste. With me it was late in showing its buds last season. My best flower was taken Augst 22nd, others taken about three weeks later were not fit for exhibition but useful for decorative purposes.—W. H. DIVERS, *Belvoir Castle Gardens, Grantham.*

CANONS OF CHRYSANTHEMUM JUDGING.

MR. CHARLES PEARSON'S excellent paper on "Improving Chrysanthemum Shows," as published in the Report of the National Chrysanthemum Society, was referred to last week (page 266). It was stated that this paper would do much good. It has done good already, and is bound to influence many shows and exhibitors of groups of plants in the right direction. Mr. Shea's analytical remarks on methods of judging cut blooms are not less worthy of attentive perusal by all who are interested in the important subject that he treats so well. The annual reports of the N.C.S. have, as they deserve, many readers, but there are of necessity many more into whose hands the publications do not naturally fall, but we do not see any notification that the present report is sold to non-subscribers. It would interest numbers of them, and perhaps draw some, at least, closer than hitherto to the greatest organisation in the Chrysanthemum world.

Able and honourable as are recognised judges of Chrysanthemums as a body, and just, as a rule, are their awards, yet there is a general sense of something wanting on the question of uniformity of ideals and of methods. It would seem to be tacitly understood that judge A is a "quality man," while B places "size" before all things, and C is a stern "colourist." This may not be so, and is not in the sense that is somewhat generally understood; but if the facts are not in accordance with popular opinion, so much the worse for the facts—or rather for some exhibitors who fail to recognise them, for is it not a fact that at shows where it is the custom to have "fresh judges" yearly that contentions are the most frequent as to the accuracy of the awards? Is not this the result mainly of exhibitors staging to meet what they conceive to be the fancy or peculiar idiosyncrasy of some particular leading judge, and being several points wide of the mark in their imaginings?

It is true that judges may differ somewhat in their conceptions of the relative merits of blooms, or of the different features they possess, and it is not surprising that these differences should be exaggerated. It is more than enough that they exist, and it would be altogether more satisfactory if they did not. Mr. Shea is quite right, "the science of judging should be as exact a science as that of cultivation," and now that this gentleman has brought the matter forward in a paper which met with warm acceptance, there is hope that the object in view will be achieved.

The undertaking is no light one. First to be defined are, what Mr. Shea happily describes, the "attributes" of a typical show bloom, and the relative weight they should bear to each other. Starting from or with the commonly admitted qualities of "diameter, depth, solidity, finish, freshness and colour," adding for the incurved section, breadth of

petal, a crucial point to decide is this, Can a simple form of words represent what is needed, and that will be clearly understood, as applying to both the Incurved and Japanese sections? This has never yet been accomplished, if indeed seriously attempted. Is it practicable?

Take the element of firmness or "solidity." This is unquestionably a most important factor in an Incurved bloom, but can it have the same status in a Japanese? In Mr. Shea's proposition, evidently suggested as a basis for consideration, we find that out of eight points, diameter of blooms is the leading feature. The following are his propositions:—

1, Diameter up to ...	...	...	...	...	...	2 points
2, Depth " ...	...	...	...	...	...	1½ "
3, Solidity " ...	...	...	...	...	...	1½ "
4, Colour " ...	...	...	...	...	...	1 "
5, Finish " ...	...	...	...	...	...	1 "
6, Breadth of petal ...	...	...	...	...	...	1 "
						8 "

In the discussion that will ensue it is hoped the question of simplicity will be kept well in view in contradistinction to complexity. In reference to incurved blooms not a few cultivators and judges will be unable to agree with Mr. Harman Payne that "diameter certainly ought to claim the highest position." If this had been so at the Crystal Palace last year it would have led to a revolt. Not only there, but at many other shows there were broad flat blooms last year (as there are every year), which, because of being so, were passed by others a trifle less in diameter but altogether deeper and firmer—more developed, heavier if placed in the scales, displaying greater art in cultivation and finish at the time of adjudication. Judges have to act on the condition of the blooms before them, not what they were a few days ago nor what they would be a few days hence if they had not been cut. If this principle is departed from the work must be loose, fanciful, and unscientific.

Why, in the interest of simplicity, without a sacrifice of accuracy, cannot there be a condensation of attributes? say, for incurved blooms—

Depth and solidity ...	...	...	...	...	...	3 points
Diameter ...	...	...	...	...	...	2 "
Colour and finish ...	...	...	...	...	...	2 "
Breadth of floret ...	...	...	...	...	...	1 "
						8 "

A bloom if deep and solid is better than one that is broader, if flat through being young and undeveloped, or loose through over-age. As to "freshness," a bloom cannot very well be other than fresh if well coloured and finished, and if it is not it will lose marks. The smaller the number of definitions the more quickly can the properties be grasped. It is a question if there would be anything lost if "diameter of bloom and breadth of petal" were grouped, as the two properties usually go together, one being to a marked degree the outcome of the other. The leading factors in determination would then stand thus—

Depth and solidity up to ...	...	...	...	...	...	3 points
Diameter and breadth of floret ...	...	...	...	...	...	2 "
Colour and finish ...	...	...	...	...	...	2 "
						7 "

Are there any judges of experience who could not to their own satisfaction quickly gauge the merits of blooms on this basis? If they could not, then must a greater number of definitions be adopted. Having in view the time at disposal, in most cases though not all, unduly limited through lateness in staging, the triune objective has to be kept in view—accuracy, simplicity, and reasonable celerity.

Whatever the number of definitions and maximum points of a typically perfect bloom, would it not further simplify matters if the judging were done on the same number of points? or, in other words, instead of adhering to the present 6-point system work on the 7-point or 8-point standard, as the case might be? The greater the simplicity, consistent with accuracy, the greater the chance of uniformity in judging at shows all over the kingdom.

In the propositions advanced, solely for purposes of consideration and discussion, it will be observed that high cultural condition of incurved blooms, as represented by depth and solidity, is not overbalanced by mere "diameter" which is often accompanied by other defects; and if not defective the blooms cannot lose, but will be bound to gain points, while colour and finish are not lightly regarded, though not so highly estimated as to unduly prejudice culture as represented by size and "build."

The question now arises. Are any of the proposed apportionments of properties applicable to Japanese blooms? For instance, is the term "solidity" appropriate, or would "fulness," signifying a well filled bloom, be better? Then, is not colour, whether represented by brilliancy, clearness, or purity, almost of more importance in this than the incurved section? The prominent characteristic of the latter is combined in build and contour. Given a grandly built incurved bloom, is a little loss of colour quite as much felt as it is in the Japanese in which glistening colouration is so great a charm?

If only for the purpose of making a start, and being npsct by growers and judges, a venture is made to suggest an equality of attributes—namely, diameter, depth, fulness and colour, each two points, for a

typical Japanese bloom. That is a simple, easily understood and remembered definition—mentioned as calculated to do justice to the blooms, and to lead to uniformity in adjudication.

Relative to methods of judging, Mr. Shea is clearly in favour of the "points and marks" system where pointing is resorted to, as it must be in close competition. It is quite true that experienced growers and judges with well trained "Chrysanthemum eyes" can form a very good idea of the relative merits of competing stands without pointing, but they cannot judge with exactitude, nor can they show that the decisions are right in very close competition.

The "point and mark" system was set forth in the *Journal of Horticulture* five years ago—an article that Mr. Shea had not read when he wrote his excellent paper. Examples are there given (page 486, December 8th, 1887) on the use and working of the plan. Without for a moment suggesting that the relative merits of competing stands cannot be arrived at with a near approach to accuracy in the customary way of careful adjudicators, it is all the same certain that the division of the integers leads to more exact results. The full point method can only be accepted as satisfactory on the "as fair to one as another" principle, if a principle it be, whereas by the method advocated by Mr. Shea the finer differences in merit are "caught" and set down in figures, and the work rests on a clearly defined scientific basis. By no other plan yet devised can the full merits of a bloom be extracted so well.

For elucidation it is called the "shilling and pence plan." A point is regarded as a shilling. In judging it is quite common to give "half points," and even then there is often a good deal of hesitation and time lost in deciding. As half a shilling is 6d., so surely it is as easy to divide a 6d. in two parts of 3d. Take a bloom of say Lord Alcester, Edwin Molyneux, or any other. A sanguine judge (A) may say "6 points." "No," rejoins his cautious colleague (B), "it cannot be, for there is one better, and 6 is the maximum. I say 5 points." "Never," retorts A. "Very well," answers B, "let's half it;" but A still demurs, and says it is worth "something more." How is the compromise to be effected? Very easily, and much more quickly than it has taken the men to argue the matter. Divide a point into four marks—a shilling into four threepences—and the thing is done.

Take for example four blooms:—

If No. 1 is worth a little more than 5 points, but not 5½, put it down at	Points.
If No. 2 is worth half a point more, enter it	5s. 3d. = 5½
If No. 3 is worth a little more than this, say	5s. 6d. = 5½
If No. 4 is practically faultless, let it be so entered	5s. 9d. = 5¾
	6s. 0d. = 6

In practice the work is usually done mentally, in "threes"—reading the blooms across a stand and setting down the total, say back bloom, 5s. 3d. (5½), middle, 4s. 9d. (4¾), front, 4s. 3d. (4¼); total 14s. 3d. = 14½

On the half point system the verdict would probably be, 5½, 5, 4 14s. 6d. = 14½

On the full point system we might expect, 5, 5, 4 14s. 0d. = 14

In the discrepancy thus revealed who shall say that the true value is not 14s. 3d., or 14½ points? Follow the example through a forty-eight stand, and we find the full point system would give 146

The half point method would total 154

The quarter point judging (shillings and threepences) 158

Again, who shall say the exhibitor is not as entitled to the full value of his skill as represented by the merits of his blooms as he would be entitled to the exact change due to him out of a shilling?

It may be said, "If all stands are judged by full points it would be fair to all;" but there is obviously a greater liability to under or over-estimate some of the blooms by this than the other systems. Practically there might be nothing wrong on the half point routine (and this, at least, should always be resorted to), though accuracy rests in the further sub-division.

As to celerity *versus* tediousness. The most tedious judges are those who march to and fro a hundred times, comparing this bloom with that, sometimes getting confused in the process, and then giving a haphazard verdict.

By working (1) on the full point system, judges are longer in deciding on the merits of several blooms than when working (2) on the half point plan, while judges who are used to the quarter point (or four threepenny marks) system are the quickest of all in arriving at unanimity. If the value of every individual bloom is set down in figures, then the last-named method is not only the best, but the quickest; but unless a judge is a swift and sure mental calculator (as the writer is not), then the triplet method of counting on the half point system would enable him to get through the classes sooner.

In these remarks there is no desire to press the claims of any particular method, but to explain the nature of the one that Mr. Shea prefers, and which, as is apparent by the discussion as published in the N.C.S. Report, is not in the least understood by some persons, and not quite comprehended by some others. Mr. E. Molyneux understands it very well, so does Mr. G. Gordon (and he knows where it withstood a crucial ordeal when a 20-guinea cup was in question), while Mr. J. Udale, an acute Judge, who after practising it, recorded his opinion that "nothing could be more perfect, practical, and simple." He should have added "up to date," because nothing is "perfect" in this reference.

The whole subject will doubtless have full and careful consideration, with the object of, as far as is practicable, ensuring uniformity in judging with accuracy, and the N.C.S. has at its command the men for the emergency.—J. WRIGHT.

LESSONS FOR YOUNG GARDENERS.

YOUNG gardeners will do well to read and study the leading article in the *Journal of Horticulture* for March 29th, and to follow up the advice given on the various duties relating to gardening. In large establishments the work is very often divided into departments, such as fruit houses, plant houses, kitchen garden. In many places the glass houses are situated some distance from the kitchen garden, which makes it rather difficult to get an insight as to work accomplished there. Moreover, as a rule, most beginners like the glass department best, and seem to think that work in the kitchen garden is of a more menial kind.

I well remember in my first place the head gardener telling me that if I wanted to become a good gardener I should have to take interest in outside work as well as under glass, for one of the most important duties of a gardener was to produce plenty of good vegetables. Young men that are interested in the work can generally find ways and means of gaining knowledge on all branches of gardening, even if they are engaged in one department only, for "where there's a will there's a way."

Stoking is a very important point in connection with air-giving. Sun power should always be made the most use of, it being better than artificial heat. It is a mistake to have the pipes so hot as to necessitate opening the ventilators more than is required to maintain the maximum temperature, as well as being a waste of fuel; but, at the same time, the fires should be attended to early enough in the afternoon or when the sun declines to keep up the proper temperature.

Drawing should form part of a gardener's education, for he is often called upon to make alterations or to lay out flower beds. In building glass houses and other garden structures, as well as the arrangements of heating apparatus, a gardener should always know exactly what he wants, and be able to draw out a plan to a given scale, as well as to accomplish work from a plan drawn to scale.

All young gardeners should keep a diary of their work, and as much as possible of that done by others, which they will find extremely useful for future reference as intimated by your correspondent. It will also induce greater interest in their work, as well as giving expression of communicating what they do to others. The diary should be kept in a systematic way; seed-sowing, planting, when gathered, and remarks on crops ought to be written in separate columns. For the guidance of those who may be in doubt as to the best way to proceed I may say that a book about the width of foolscap is best, each page being divided into sections. On the left hand column the date should be placed, next the time of planting or sowing may be ruled, and on the right hand keep records when the crops were gathered and remarks on them.—J. S. UPEX, *Wigganthurpe, York.*

CHINESE PRIMULAS.

THE time has now arrived for an early sowing of Primulas to be made. In gardens where a long succession of bloom is required throughout the autumn, winter and spring months, it is necessary to sow at intervals until the end of June, the latter sowing supplying plants for late spring decoration. Few plants are more useful for winter work than *Primula sinensis* and its varieties, and it is therefore not at all surprising to find them generally grown.

Before sowing the seeds, be sure that the pans are well drained. This is very important. Use a compost of about equal parts of leaf mould, fibry loam, peat and sand, pressing the soil but moderately firm, then apply with boiling water, and when this has thoroughly drained away, the seeds may be sown, slightly covering them with some of the compost finely sifted, or sand. Place a piece of glass over the pan, which will help to retain the moisture, and at the same time afford protection from insects. Remove to a temperature of about 55° or 60°, which will soon cause the seeds to germinate quickly. If the atmosphere of the house or pit is moist, no water will be required until after the seeds have germinated, and then it must be given very carefully, or the tender seedlings will damp off.

When the plants are in rough leaf, remove to a shelf in the greenhouse or to a frame, and when sufficiently hardened, place singly in small pots. Do not put the young plants too low in the pots, but allow the heart of each one to be well above the level of the soil. Should they appear loose, secure with a tiny stake and tie with matting. For the final potting use a compost of about equal parts of loam, leaf mould, and well decayed manure, with a liberal addition of gritty sand. Five or 6 inch pots are the most useful sizes, unless extra large plants are required, in which case the huds must be kept pinched out, until within a few weeks of their being required for a display of bloom. Shade from bright sun, but do not cause the plants to become drawn. Most young gardeners have the habit of throwing a mat across the frame, irrespective of what kinds of plants are underneath. This is a mistake, some plants requiring a lighter degree of shade than others, Primulas included. Remove the lights on every favourable occasion, especially during the warm nights of summer and early autumn. The plants will strengthen considerably if so treated.—HEDLEY WARREN.



EVENTS OF THE WEEK—Several exhibitions of spring flowers will take place during the ensuing week. A Narcissus Show will be held on the 18th and 19th at Edgbaston, Birmingham, under the auspices of the Botanical and Horticultural Society, and on the same dates the Newcastle-on-Tyne Spring Flower Show will take place. The second Spring Exhibition will be held in the Royal Botanic Society's Gardens, Regent's Park, on Wednesday, the 18th.

— **THE WEATHER IN LONDON.**—Bright and warm weather continues in the metropolis. On Sunday the shade maximum reading in London was as high as 76°, or just 20° in excess of the average for the month of April. To find an equally high reading we have, it is true, a very short way to go back; for last April, a month which beat all the records, the thermometer in London on one occasion rose to 82°. In two other Aprils in the past twenty years the thermometer has risen to a higher point than it did on the 8th inst., but in all three instances the warmer weather occurred after the middle of the month. Monday, Tuesday, and Wednesday were equally fine, and at the time of going to press there does not appear to be any probability of a change.

— **THE WEATHER IN THE NORTH.**—The last week has been dull throughout, with a persistent cold east wind. On Saturday and the two following days gentle showers of rain fell; Monday offered a little misty sunshine between the showers, and Tuesday morning, with a change of wind to south-east was dull but mild, the thermometer standing at 50°. There is no decided intimation of change. The rain has told on pasture, and the hedges and woods show a perceptible tint of green.—B. D., *S. Perthshire*.

— **THE ROYAL HORTICULTURAL SOCIETY'S FRUIT SHOW AT THE CRYSTAL PALACE.**—We have pleasure in stating that it has been decided by the Council of the above Society to provide what is certain to be a great Exhibition of fruit at the Crystal Palace in the autumn of the present year. As has been previously intimated, a spectacular display is not the sole object, but proceedings will be instituted of an educational character in connection with the event.

— **THE ROYAL GARDENERS' ORPHAN FUND.**—At the monthly meeting of the Committee which took place at the Horticultural Club, Hotel Windsor, on the 30th ult., the following special donations were announced:—The Market Harborough and District Chrysanthemum Society, per Mr. G. Green, Secretary, £1 15s.; a friend, per Messrs. J. Laing & Sons, £1 1s.; the young men in the gardens of Harewood House, Leeds, per Mr. J. Jeffrey, 10s.; Mr. A. H. Pearson, The Nurseries, Chilwell, Notts, 16s.; Mr. J. T. Powell, Park Place, Henley-on-Thames, box, 14s.; and the Chiswick Gardeners' Mutual Improvement Society, £2. The quarterly payments to children upon the Fund, amounting to £198, were ordered to be made.

— **BULBS IN THE LONDON PARKS AND GARDENS.**—These popular breathing spaces are now bright with Dutch bulbous flowers, such as Hyacinths, Tulips, and Daffodils. In the gardens round the Houses of Parliament the Hyacinths are particularly good. In all there are twenty-four large beds devoted to them, and amongst the varieties represented are Gigantea, Baron Van Tuyl, Gertrude, Mirandolina, Lord Derby, Robert Steiger, Chas. Dickens, and Alba superbissima. Many of the kinds are noticeable in the Temple Gardens and Hyde Park. The Tulips are not yet quite at their best, but the Daffodils are making a most charming display.—H.

— **IMPNEY.**—Mr. W. Davies, for several years gardener to H. Fisher, Esq., at Moxhull Hall, Erdington, has been appointed gardener to J. Corbett, Esq., M.P., Impney Hall, Droitwich, where we trust he will be as successful as he has been both at Moxhull and at Woolton Wood. He succeeds one of the best of British gardeners, Mr. Richard Parker, who it is hoped will soon obtain an appointment commensurate with his admitted abilities. Mr. Parker has been nearly ten years at Impney as the worthy successor of Mr. Owen Thomas, Her Majesty's accomplished gardener at Windsor and Frogmore.

— **RECORDING SUNSHINE AT THE ROYAL BOTANIC GARDENS.**—In the Botanic Gardens, Regent's Park, writes Mr. Sowerby, the Secretary, to a daily contemporary, among many other forms of scientific apparatus in use for meteorological observations, two for recording sunshine are the more pleasing, as being worked by Nature herself. One is a tabulated card marked by the action of the sun by aid of a burning glass. This records 211 hours of sunshine during sixty-seven days of the first three months of the present year 1894, against 168 hours and fifty-two days of the first three months of 1893, and 135 hours and forty-nine days of 1892. The other recording apparatus, which, although it does not write its notes in figures, is much more valuable and pleasing, is the opening of flowers, and already the blaze of colour now seen in the conservatory in the Gardens, the light of flowers of all climes, is the best evidence of the special amount of sunshine now blessing old England, and almost makes us fancy that we are living in the sunny south of balmy climes.

— **WAKEFIELD PAXTON SOCIETY.**—At the recent meeting of the Wakefield Paxton Society Mr. W. Hudson, Sandal, gave a lecture on "The Violet." The lecturer, in a characteristic, though interesting way, brought poetry, mythology, and folk-lore to his aid in illustrating the popularity of this charming, odorous, yet simple flower. His practical recommendations in regard to its culture were comprehensive and to the point, and evoked a long discussion, at the conclusion of which Mr. Hudson was heartily thanked for his useful and opportune discourse. There was a large attendance, over which Mr. W. Tunnicliffe presided, with Mr. J. G. Brown as vice-chairman.

— **THE CUCKOO—EARLY ASPARAGUS.**—Mr. C. Orchard writes from Bembridge, Isle of Wight:—"We are having exceptionally fine spring weather, bright sunshine all day and heavy dews at night; vegetation in consequence advancing rapidly. Swallows were seen on the 4th, the cuckoo heard on the 6th, and the nightingale on the 7th of the month, a few days earlier than last year. I began cutting Asparagus out of doors on Saturday, March 31st, a week earlier than last year." Mr. G. R. Allis, Oldwarden, Biggleswade, informs us that the cuckoo was first heard there on the 1st inst. A gentleman informs us that he cut the first dish of Asparagus from his garden in Sussex on the 1st inst.

— **RULE OF THUMB GARDENING.**—It was in no controversial spirit that I entered a protest against the term rule of thumb as applied to the gardening profession, but merely a vindication of the plain truth, and as a friendly hint from one of the reading public to let us have our mental food in a palatable and digestible form. Most middle-aged men have seen and followed a revolution in many gardening practices, and the horticultural press is a standing protest to the term as applied to the vocation. "A. D." (page 261) says that it is not enough that any practice in horticulture should be successful to justify that practice. I say that is quite enough, and that the successful horticulture duly recorded in the gardening journals is a complete refutation of the term rule of thumb as applied to gardening.—R. M.

— **THE YEAR 2000.**—M. Berthelot delivered a remarkable speech at the banquet of the Syndical Chamber of Chemical Product Manufacturers at Paris last Friday night. M. Berthelot's subject was "The World in the Year 2000." After saying that is if a spiritual chemistry could be discovered to change human nature as deeply as chemical science could modify the globe, he continued, says a "Daily News" correspondent:—"This change will be greatly due to chemistry utilising the heat of the sun and the central heat of the globe. With such a source of heat all chemical transformation will be easy. The production of alimentary matters will be a consequence. This production is in principle resolved, and has been for forty years, by the syntheses of grease and oils. That of hydrates of carbon is going on, and that of nitrogenous substances is not far off. When energy can be cheaply obtained food can be made from carbon taken from carbonic acid, hydrogen taken from water, and nitrogen taken from the air. What work the vegetables have so far done science will soon be able to do better, and with far greater profusion, and independently of seasons or evil microbes or insects. There will then be no passion to own land, beasts need not be bred for slaughter, man will be milder and more moral, and barren regions may be preferable to fertile as habitable places, because they will not be pestiferous from ages of manuring. The reign of chemistry will beautify the planet. There will under it be no need to disfigure it with the geometrical works of the agriculturist, or with the grime of factories and chimneys. It will recover its verdure and flora. The earth will be a vast pleasure garden, and the human race will live in peace and plenty."

— WE are informed that Prof. O. Mattiolo has been appointed Extraordinary Professor of Botany and Director of the Botanic Garden at the University of Bologna.

— DEATH OF MR. HUGH GOWER.—We regret to hear of the death at Kingston-on-Thames on Friday, 30th ult., of Mr. Hugh Gower in his eighty-second year. For upwards of fifty years Mr. Gower was manager to Messrs. T. Jackson & Son.

— QUEEN WASPS.—Mr. R. E. Brain, Eydon Hall, Northampton, writes:—"I killed a queen wasp on the 14th of January last in an early vinery, and have succeeded in killing seventeen since. Wasps are unusually plentiful in the southern division of this county."

— MR. SMEE'S FRUIT.—We are informed that Mr. A. H. Smees sent his collection of fruit, for which a medal was awarded at a recent meeting of the Royal Horticultural Society, to the Swanley Horticultural College. The gift is much appreciated there, and the specimens are valued for purposes of study, comparison, and identification by the students.

— ROYAL CALEDONIAN HORTICULTURAL SOCIETY'S SPRING SHOW.—Through a misdirection a report of the spring Show of this Society, held at Edinburgh on the 4th and 5th, only reached us on Wednesday as our pages were being prepared for press. It appears, however, to have been a fine Exhibition, plants, flowers, and fruit making an effective display.

— ELLAM'S DWARF CABBAGE.—I herewith send a sample of the above-named Cabbage, and I think you will agree with me that it is a useful early spring variety. I have seen it spoken highly of in the columns of the *Journal of Horticulture*, and can testify that it is one of the most serviceable Cabbages grown. I made two sowings on July 6th and August 6th, 1893, respectively, and commenced to cut from the first sowing on March 20th. I had only about two dozen run to seed from the first sowing out of about 180 plants. As the weather is so uncertain, I think it the best to make two sowings, as the sooner one gets them in the more useful they are. With the exception of a week in January the weather here most of the winter has been very open, and at the present time is quite summerlike.—WILLIAM ROBERTS, *Peniarth, Merioneth*. [The Cabbages sent by our correspondent were excellent for the time of year, being of a fair size and very firm.]

— THE ROYAL BOTANIC GARDENS, PÉRADENIYA.—According to a "Hand-guide" by Mr. Henry Trimen, F.R.S., "These gardens were opened in 1821, six years after the final occupation of the Kandyan Kingdom by the English. A plan for a proper botanical garden in Ceylon was drawn up by Sir Joseph Banks as far back as 1810, the site chosen being Slave Island, Colombo. Mr. W. Kerr took charge of this establishment in 1812, but he died two years later, and was succeeded by Mr. Alexander Moon. It was during Moon's rule that the gardens were moved to the present site at Péradeniya. Moon was a diligent student of the flora of Ceylon, and published a valuable work upon it, but after his death, in 1825, a succession of more or less unqualified persons were placed in charge. With the appointment in 1844, however, of Mr. George Gardner, the gardens started on the active, independent, and useful existence which they have since maintained. Mr. Gardner died in 1849, and was succeeded by Dr. Thwaites, who kept Péradeniya in a high state of efficiency for more than thirty years, and died at Kandy in 1882, having never left the island since his arrival. The present director has held his position since 1880."

— SPARROWS AND CHERRY BLOSSOM.—We are often accused of abusing sparrows unnecessarily and thoughtlessly by the would-be friends of these busy little birds, but I should like to hear the defence of their present work—i.e., cutting off the Cherry blossom. A few days since I spent a good deal of time endeavouring to find out what they were really after, but the only conclusion I could come to was they were merely amusing themselves. They were certainly not hunting for either caterpillars or fly, or, to say the least of it, if such was the case they were extremely clumsy in their work. They seemed to me to sit on a branch and pluck all the flowers off within reach as speedily as possible. Each flower is seized by the calyx and plucked, so the whole flower is removed and dropped at once. In all the Cherry orchards in this district (Faversham) the ground underneath the early varieties is literally covered with the blossom that has been nipped off in the manner described. No doubt in a season such as the present, when the trees are loaded with flowers, very little harm is done, but in seasons when there is a paucity of bloom there is a great amount of damage. Some growers assert the sparrows do far more harm in the orchards at this period than when the fruit is ripe.—JAS. B. RIDING.

— HYACINTH SHOW AND ROYALTY.—Messrs. E. H. Krelage and Son, Haarlem, inform us that Her Majesty the Queen Regent of the Netherlands, accompanied by Her Majesty the Queen Wilhelmina, visited their spring Show of Hyacinths on Saturday, April 7th.

— RICHMOND HORTICULTURAL SOCIETY.—The summer Show of this Society will be held in the Old Deer Park, Richmond, on Wednesday, June 27th. Mr. C. Capel Smith, Belle Vue Lodge, Richmond, is the Honorary Secretary, from whom particulars and schedules may be obtained.

— BERGAMOTTE ESPEREN PEAR.—We had the above from pyramid trees in use as late as the 2nd of the present month, and the flavour was excellent, probably owing to the hot and bright summer. On the other hand Easter Beurré from a north wall, as a dessert fruit, was useless.—R. M., *Newbury*.

— LECTURES ON METEOROLOGY IN RELATION TO HYGIENE.—Under the auspices of the Royal Meteorological Society and the Sanitary Institute, the undermentioned lectures will be given in the Parkes Museum on Mondays and Thursdays, at 8.30 P.M. April 23rd, "Instruments and Observations, and their Representation," G. J. Symons, F.R.S. April 26th, "Temperature of Air, Soil, and Water," Dr. H. R. Mill, F.R.S.E. April 30th, "Barometric Conditions and Air Movements," R. H. Scott, M.A., F.R.S. May 3rd, "Moisture: Its Determination and Measurement," W. Marriott, F.R.Met.Soc. May 7th, "Climate in Relation to Health, and Geographical Distribution of Disease," C. Theodore Williams, M.A., M.D., F.R.C.P. May 10th, "Fogs, Clouds, and Sunshine," F. Gaster, F.R.Met.Soc. The fee to non-members for the course is half a guinea.

— DUNDEE HORTICULTURAL ASSOCIATION.—The monthly meeting of this Association was held on Friday evening in last week. John Machar, Esq., Vice-President, in the chair. A paper was read by Mr. A. W. Wade, Douglas Terrace, Broughty Ferry, on "The Amaryllis." In opening the subject he gave a history of the introduction of the plant into this country, and referred to the vast improvements made in recent years by crossing and hybridising. Mr. Wade said, that to grow Amaryllises to perfection they must have a rich soil, and careful attention given to watering up to flowering time. After blooming, and whilst making their growth, the plants require an abundance of moisture; but when this is completed they should be dried off, and left to rest for three or four months. An interesting discussion followed. The exhibits consisted of several beautiful Amaryllises, from Messrs. J. Veitch & Sons, London.—J. M. C.

— WISTARIA SINENSIS.—Whenever seen in good condition this must, I think, be considered one of the grandest of hardy climbers. Unfortunately it is often sadly abused in the matter of pruning and training. It is not a suitable climber for planting in positions where wall space is limited, but requires plenty of room to ramble at will. In training young plants I like to dispose the main branches thinly, about 18 inches asunder, till two-thirds of the allotted wall space is covered. The side shoots are then laid in 9 inches apart till the whole surface is evenly covered, a perfect sheet of pendulous flowers is then obtained. When any of the side branches become weak or unsatisfactory they are cut away, and young shoots laid in during the summer. This plan is far more satisfactory than the orthodox one of spurring closely each year till the gnarled shoots become weak and unsightly. At the present time we have a plant covering an area of 600 square feet, which furnishes a feast of floral beauty, once seen, to be long remembered.—H. D.

— TREES IN LONDON.—"A Strand Man" writes:—"The trees and shrubs in our London squares and other pleasure grounds are apt to grow faded and shabby long before the fall of the leaf; but they have as a rule the advantage of gladdening the eye with the sight of foliage rather earlier than the vegetation in the country. At this moment anyone who will turn out of the roaring Strand into that pleasant little nook, the grave ground of the ancient chapel of the historical Palace of the Savoy, will be rewarded with the sight of a Poplar in almost full foliage. Its shade in the bright sunshine to-day appeared to be fully appreciated by the London sparrows, who gathered in numbers in its branches, keeping up a great chirping and twittering, which, without begging the question whether 'birds confabulate or no,' which Jean Jacques and the poet Cowper have familiarised us with, expressed, I should say, either articulately or inarticulately, a lively sense of the advantages of living in town in the spring. Of course, it is the shelter of this peaceful retirement which encourages the Poplar to clothe itself thus early. Its neighbours, the Limes and the Planes, have only just burst their buds."

— BROCCOLI AND FROST.—Referring to the statement of Mr. John Chinnery (page 260) of his Broccoli plants withstanding the test of 33° of frost, we registered 22° and lost 75 per cent. of Spring White and 60 per cent. of Main Crop and Model. A late foreman of mine now in Yorkshire, when writing a few weeks since, states, "We have had 32° of frost. All my Broccoli are killed, and my Brussels Sprouts quite spoiled." How are we to account for the differences in experiences indicated?—HACKWOOD.

— MARCH WEATHER IN SCOTLAND.—Mr. G. M'Dougall, Stirling, writes:—Total rainfall for the last month amounted to 2.929 inches, which fell on fourteen days; greatest fall on any day 0.590 inch on the 7th. Frost was recorded on sixteen nights; coldest night, the 17th, with 25.8°; coldest day, the 11th, with 43.2°; warmest night, the 20th, with 44°; warmest day, the 26th, with 64°. Mean maximum, 51.9°; mean minimum, 33.4°. There was no rain after the 14th until the 31st, when 0.015 inch fell. More than 30 inches of rain have fallen since the 1st of December.

— THE WEATHER LAST MONTH.—March was bright and dry, with much less wind than usual, and very little frost except on the 17th and 18th. The wind was in a westerly direction eighteen days. The total rainfall was 0.94 inches, which fell on eighteen days; the greatest daily fall being 0.25 inches on 12th. Highest shade temperature, 67° on 30th; lowest, 24° on 17th; mean daily maximum, 53.83°; mean daily minimum, 34.00°; mean temperature of the month, 43.91; lowest on grass, 15° on 17th. Total sunshine, 167 hours 10 minutes.—W. H. DIVERS, *Belvoir Castle Gardens, Grantham*.

— THE WEATHER.—Reports as to the weather received from the country generally show that in spite of local thunderstorms experienced in many places last week there are still many districts in which no rain has fallen since the middle of March. Of the stations in daily communication with the Meteorological Office there are four which may lay claim to this distinction, the places in question being Shields, Dungeness, the North Foreland, and Valencia (Ireland). At the first-mentioned station the period of absolute drought had lasted up to Sunday morning for as many as twenty days, while at the three other places it had continued for no fewer than twenty-five days. Taking the past three weeks as a whole, we find that with the exception of a few isolated localities in the more central parts of England and Ireland the total rainfall has amounted to less than a quarter of an inch, and in very many places to less than one-tenth of an inch. Up to the present time the drought of this year, though less severe than that of last, has been far more general, the absence of rainfall being as great in many of the northern parts of the kingdom as it is in the southern districts.

— AN ANCIENT SEQUOIA.—The British Museum has recently acquired a section of a trunk of *Sequoia gigantea* from California, having a diameter of somewhat over 15 feet. We learn from "Nature" that the annual rings have been carefully counted by Mr. Carruthers, and two years ago when the tree was cut down it was 1330 years old. It was then still living and vigorous. It had, therefore, attained already a considerable age when St. Augustine introduced Christianity into Great Britain. The rings indicate a remarkably symmetrical growth on all sides of the tree. For the first five or six centuries they show a considerable annual increase in the girth of the trunk, getting gradually thinner as the superficies to be covered became larger, and becoming very thin for the last three or four centuries. It is satisfactory to learn on the authority of Mr. Carruthers that there were in 1884 in all the groves which he visited trees of various ages, so that *Sequoia* is in no danger of early extinction.

— PROPAGATING PYRETHRUMS.—"Divide Pyrethrums and make new beds" is the somewhat loose advice given to readers of a provincial newspaper by some amateur correspondent. I should like to know on what experience that advice is based. My own is that no hardy plants divide so badly as do Pyrethrums. In the trade nurseries, where the work of propagation is performed with considerable success, the rule is to take off young shoots in the spring with pieces of root, if possible, attached; if not then as ordinary cuttings insert them singly into tiny pots, and in sandy soil, root them in warmth, and thus increase stock. If the roots be lifted as above advised and be divided there is always the gravest danger that the young shoots will be severed from the roots, and these can only be propagated as cuttings. Even when successfully divided the plants take a long time ere they get hold of the ground, often suffering much in drought because they are shallow rooted. Amateur gardeners could soon lose their stocks in this way.—D.

— HEATING APPLIANCES.—Messrs. J. Weeks & Co., King's Road, Chelsea, S.W., send us a record of the experiences of persons in regard to their patent upright tubular boilers. In saying that the writers are well known gardeners, and who are apparently perfectly satisfied, no further testimony as to the usefulness and durability of the boiler mentioned need be given.

— DOUBLE PRIMROSES.—Having shortly to introduce the subject of the hardy Primrose before the members of an influential gardeners' association, I should very much like to learn of any northern florist who has a fairly complete collection of these fine old double hardy flowers. I doubt whether anything like a representative collection can be found in England, in any case in the south or Midlands. That the plants are of the best coloured varieties difficult to keep in the south there can be no doubt. Still, in commenting on double sorts, it is desirable to know where they can be obtained. A complete collection would include white, blush, lilac, sulphur, yellow, rose, purple, violet purple, and crimson, with two others, platypetala plena, and something "crousse," which I have almost forgotten. I have had as many as twelve distinctive sorts. It would be very interesting to learn of what varieties florists are yet offering. In the south the white and the lilac are common enough, but those only.—A. D.

— A FLESH-EATING CATERPILLAR.—Professor Perrier, of the Paris Museum, according to a daily contemporary, recently stated to the Academy of Sciences that Mr. Rouzand, of the Faculty of Sciences of Montpellier, has studied the habits and metamorphoses of a remarkable butterfly, whose caterpillar lives upon the Olive tree. This lepidopter was briefly described by Rambour sixty years ago under the name of *Erastria scicula*. Unlike its fellows, the caterpillar of the *Erastria* does not eat the leaves of the tree upon which it lives, but, on the contrary, despoils the latter of its parasites. It is not herbivorous, but carnivorous, and feeds upon the coccinellidæ that abound upon the Olive tree, and often cause the death of it. In addition to this peculiarity, this singular animal presents others of great interest. In its adult state it is so coloured as to exactly simulate the excrement of the sparrow. While very young it hides itself under the carapace of the coccinellidæ that it devours. When a little older it spins a ring of silk around such carapace, and thus enlarges its dwelling in such a way that it shall always be adapted to its own size.

— BIRMINGHAM AND DISTRICT AMATEUR GARDENERS' ASSOCIATION.—There was a very good attendance of members at the last week's meeting of the above Association, held at their rooms, 116 Colmore Row, Councillor Martineau (Vice-President), in the chair. Mr. Arthur Groves read a paper on "The Town Garden." The Chairman, in introducing the lecturer, said that as the prime object of the Association was to encourage the better cultivation of town gardens they would notice with delight the increased attention now given to the public gardens of the city as compared to a few years ago; this could not but help to stimulate the inhabitants to do more with their own little plots of garden. Mr. Groves thoroughly dealt with every phase of town garden, and gave information as to the best time to commence planting and sowing seeds, and also the varieties of plants with which amateurs are likely to be most successful. He said herbaceous plants rightly held the foremost position, as, considering the attention they required, what could give more satisfaction than such plants as Achilleas, Campanulas, Helianthus, Rudbeckias, Michaelmas Daisies, and Gaillardias? Creepers such as Clematis and Virginian Creeper were useful for covering bare walls; rockeries were very picturesque, and if properly formed not only reminded one of the natural scenery of the country, but would also hide any unsightly corners or spaces in the garden. A good grass lawn was also a great adjunct to a town garden. He gave a list of the plants most suitable for growing in a shady place. In conclusion, he strongly advised amateurs to grow plants of good quality, and not more than could be well and easily managed, as one good plant well grown would give as much or more bloom than half a dozen weakly plants crowded together. A vote of thanks was passed to Mr. Groves for his very interesting paper. Messrs. Hy. Becch, E. D. Clark, C. Daniell, C. Hartley, W. H. Peake, F. T. Poulson, A. Roe, H. Smith, and W. H. Wilks exhibited plants in pots and cut flowers; Messrs. W. B. Child and R. Sydenham exhibited Narcissi and Tulips not for competition. The Association is at present in a very flourishing condition, the membership having reached 210; the average attendance at the meetings is double what it was last year. The Secretary, Mr. Wm. B. Griffin, will be pleased to nominate anyone who desires to become a member. His address is now Wychbury, Alcester Road, Moseley.

— *ARTEDIA SQUAMATA*. — Herr Max Leichtlin writes to an American journal:—"This year *Artedia squamata*, a beautiful umbelliferous plant from Asia Minor, will be sent out. It resembles in shape *Nigella damascena*. The leaves are finely cut, and the creamy white flowers 2 inches across, which appear in great abundance, are sure to find admirers. The outer circle of florets are broad-shaped, and thus the flower seems to be substantial and elegant too."

— *TORQUAY DISTRICT GARDENERS' ASSOCIATION*.—The second annual meeting of the above Society took place on Friday, April 6th, Mr. W. B. Smale taking the chair in the unavoidable absence of the President (Mr. W. Lavers). The Hon. Secretary (Mr. F. C. Smale) reported a balance in hand of £15, and a total membership of 120. It was intended to use a portion of the balance in the purchase of a large bookcase, as several valuable works of reference had been presented to the Society, including two vols. of Don's "Botany," by Mr. W. Lavers, and twenty-five bound vols. of *Journal of Horticulture*, by Mr. W. Ainstie. Twelve papers of a high order of merit had been read during the past session, and the Association was in a successful and flourishing condition. Dr. Hamilton Ramsay was elected President for 1894-5, other officers and Committee being also appointed.

— *EDGEWORTHIA CHRYSANTHA*.—Writing to the "Garden and Forest," Mr. Watson of Kew says, "This is a handsome winter-flowering shrub which does not appear to be known in horticulture, although introduced from China by Fortune fifty years ago. In the temperate house at Kew it is represented by a large bush 5 feet high, with numerous thick stems, branched above, and bearing in summer terminal clusters of broad lanceolate green leaves which fall off in the autumn, and are succeeded in February by terminal ball-like umbels of bright lemon-yellow *Daphne*-like fragrant flowers. These last several weeks, gradually changing colour to creamy white; they are attractive to the eye throughout, and exhale a most alluring Violet-like odour. Planted out in a border of good soil this shrub has taken care of itself for many years, but it has never flowered so freely as this year. It may be propagated either by division or from cuttings."

DAFFODILS AND THE WEATHER.

ONE hears murmurs of complaint this year from growers of these deservedly popular flowers, the complaint being that the bulbs are coming up badly, and the flowers are deficient in length of stalk. On the other hand, those exhibited at the meeting of the Royal Horticultural Society on the 27th ult. were particularly fine. I am glad to be able to report favourably in our own case, as the somewhat cool soil on which they are grown seems favourable to them during a dry time like the present, and *Narcissi* of all kinds are sending up strong foliage and good flowers in abundance. Although judged in the light of the leafage of the hedges, and opening of the fruit bloom, the season is not so early as that of 1893, yet the Daffodils are distinctly earlier. This is no doubt owing to the bulbs being thoroughly ripened last summer. The extremely warm sunshine of the last ten days or so has brought on all kinds at a great pace, and if it continues for another week we shall have everything out at once. At the present time good blooms of early kinds, such as *Golden Spur*, *obvallaris*, and *Telamonius plenus*, are to be found in abundance; while much later varieties, such as *Horsfieldi*, *Empress*, *Emperor*, *Maximus*, *Leeds* in variety, and *incomparabilis* of sorts are opening fast.

This rushing into bloom all at once is much to be regretted, as the flowering season is greatly curtailed thereby, and flowers opening in such hot weather never last long. I think those varieties of *incomparabilis* having orange stained cups show less red in a hot season, at any rate there is a marked absence of colour in such this year. Of *Narcissi* now in flower or showing bud the following are most worthy of notice:—

Golden Spur was the first to open, and it is quite the finest of the early yellow Daffodils, but is not so robust in constitution as it might be. The *Tenby* is, of course, a little gem, but is not seen at its best here, as the soil does not suit it. Countess of Annesley is a splendid early yellow, and with us it is a marvel of productiveness, the strong bulbs sending up three, four, five, and even six flowers each, and this after the bulbs have been divided as much as possible before planting. *Princeps* is now at its best, and is a very fine and graceful flower, but is not quite so free as one would wish. *Sir Watkin* seems very much at home with us, and is in full glory. I counted eight blooms on one bulb the other day, and this a bulb planted last autumn, not one which had been left undisturbed for a year or two. *Leeds*, *Duchesse de Brabant*, *poeticus ornatus*, *Burbidgei* (type), *Burbidgei Agnes Barr*, and *Stella* may be quoted as very free blooming varieties. *Madame De Graaff*, the giant white Daffodil, is coming up very strongly, the best bulbs sending up three buds apiece.

During this dry weather frequent stirrings with the Dutch hoe are very beneficial, as it admits warm air, and prevents the soil setting hard round the neck of bulb, which checks the full development of foliage and flower stalk. With a warm summer we may look forward to a crop of sound, well-ripened bulbs, equal to those of last season—better we can hardly hope for.—J. DUNCAN PEARSON, *Chilwell Nurseries, Notts.*



MASDEVALLIA GARGANTUA.

THIS interesting Orchid was exhibited in splendid condition by Sir Trevor Lawrence, Bart., Burford Lodge, Dorking, at the meeting of the Royal Horticultural Society on the 13th ult., when a first-class certificate was awarded for it. *Masdevallia gargantua* belongs to the *Chimæra* section, and is well represented in the accompanying illustration (fig. 46). The flower is stout in substance, the sepals and petals pale yellow, the lip very broad and of a purplish brown colour.

DENDROBIUM SUPERBUM HUTTONI.

THE illustration (fig. 45) on page 275 depicts a bloom of *Dendrobium superbum Huttoni*, which was exhibited by Sir Trevor Lawrence, Bart., at the Drill Hall, James Street, S.W., on the 27th ult. The plant in question, for which a first-class certificate was awarded by the Orchid Committee of the Royal Horticultural Society, bore a moderate number of flowers, and it appears to be an excellent form. The sepals and petals are white, as is the front portion of the lip, the throat being purplish crimson.

ORCHIDS AT CHELSEA.

THE effect of the past hot dry weather are plainly discernible in the Orchid houses of Messrs. J. Veitch & Sons, Chelsea. The blooms which were opening quickly developed, and as rapidly passed away. As a natural consequence flowers are not to be seen in very great abundance at the present time, but though they may lack somewhat in numbers, the high standard of excellence always seen here is fully maintained. The large house devoted mainly to *Cattleyas* contains some exceptionally handsome forms of *C. Trianae*, varying from blooms with a deep rich crimson lip to almost pure white. In the pleasant rockery were noticeable *Vanda tricolor*, the deliciously scented *Cymbidium eburneum*, a grand spike of a beautifully coloured form of *Phaius Wallichii*, and a charming piece of *Dendrobium Dalhousianum*. *Cypripediums* are flowering sparsely just now, but a few of great merit are to be seen. *Odontoglossums* are in fine condition, though not great in numbers.—H.

ORCHIDS—CULTURAL NOTES.

THE warm sunny days of the past three weeks have brought the flowers on rapidly, and houses devoted to Orchids are now very gay. Where no structure or compartment is set apart for flowering plants, care is necessary to preserve the blossoms from injury by water, as frequent dampings have now to be resorted to to maintain a fairly humid atmosphere. The ventilators should be opened slightly as soon as possible in the morning when fine, the little heat left on the pipes after the fires are banked up will prevent any fall in the temperature, and a gradual rise with the sun is much more natural and advisable than waiting for a given degree before ventilating.

Aërides odorata, *A. Fieldingi*, and others that were repotted or surface dressed last month will now be pushing roots and flower spikes, and a watch must be kept for woodlice, cockroaches, and other nocturnal insects which prey on the large fleshy roots to the serious detriment of the plants. *Cattleyas Trianae* and *Percivaliana*, also *Laelia superbiens*, as they go out of bloom should be examined and cleaned, and may be repotted if this is necessary. The leads ought to be kept as far away from the rims of the pots as is convenient. This will keep the roots in the pots and obviate the necessity of repotting for a couple of years at least provided good lasting material is used.

Cypripediums will now require increased supplies of water at the roots, but the foliage must not be syringed. If much moisture gathers in the axils of the leaves or on the young growths it will cause them to decay, and mischief may be done before this is noticed.

Burlingtonias, *Ionopsis*, *Sophranitis*, and other plants of small growth on blocks or in baskets need care at this season, and any little irregularities of compost put right before the new roots are far advanced. They must not be allowed to suffer from want of water at the roots, therefore examine them at least once daily. Dipping the plants is preferable to watering from a can or syringe for all plants that are suspended.

Keep a sharp look out for green fly on the advancing spikes of *Oncidium*s and *Odontoglossum*s. Diligently keep them under by passing a damp sponge over the spikes and there will be no need

of fumigating, always a dangerous operation with pseudo-bulbous Orchids.

Thrips are often troublesome on *Odontoglossum vexillarium*, and if time can be spared for cleansing these before they come into flower it will be well spent. First immerse the entire plants in tepid water, and if there are any insects in the pots this will drive them out. While they are still wet dip the heads in a weak solution of softsoap, to which has been added a little tobacco water. Lay the plants on their sides to drain, so that the soapy liquid runs away from the compost, and when nearly dry give a thorough washing of clean water from the syringe. To prevent

Short, crisp sentences are essential to make a book readable, and to bring out the salient points. Grammatical errors are likewise noticeable in the letterpress. Critics will also find a defect in the illustrations. About fourteen are given, the majority being "process" representations of plants. These the inexperienced will have some difficulty in recognising, inasmuch as the usual references are not printed beneath them, but obscurely on other pages. Omissions of this kind will scarcely be appreciated by beginners, and it is to be hoped, if a second addition is required, that the work will be thoroughly revised. This is necessary to remove the tautological phrases which mar an otherwise useful



FIG. 46.—MASDEVALLIA GARGANTUA.

slugs getting at the spikes stand the plants on inverted pots placed in saucers filled with water. *C. citrosmum* must be kept quite dry at the roots until the flower spikes can be seen in the apex of the young growth, after which plenty of water should be given.

Keep all pots and stages perfectly clean, as this helps to maintain a sweet atmosphere in the houses, and light sprinklings of soot and lime under the stages will be found of great benefit to the plants.—H. R. R.

THE AMATEUR ORCHID CULTIVATORS' GUIDE BOOK.

WE have received a copy of "The Amateur Orchid Cultivators' Guide Book," by Mr. H. A. Burberry, Orchid grower to the Right Hon. Joseph Chamberlain, M.P., Highbury, near Birmingham. Being an expert cultivator the author has dealt with his subject in a practical manner, but from a literary point of view the book can hardly be termed a success. In the first place it is rather difficult to read. The opening paragraph constitutes a sentence of 168 words, and similar instances frequently occur in the pages.

publication. As may be expected, however, the cultural details are excellent, and the following extract, referring to *Phalaenopsis Schilleriana*, is an example:—

"This Orchid is one that has baffled many good growers, even those who have everything that is necessary to successful cultivation within their reach, yet from some unexplainable reason they fail to make much headway with this plant. This is somewhat difficult to understand, as others who only give ordinary care and attention obtain excellent results, much seeming to depend upon the house in which it is grown. I, however, advise everyone to give it a trial, for if the place suits it the plant is of great interest, even when not in bloom, on account of its handsome foliage."

"Its handsome flowers are produced on long branching spikes from December to February, and are of a soft pale mauve tint, and it should be grown in baskets suspended near the glass on the shady side of the house, too much bright light being injurious, and it should be placed into the basket in much the same way as recommended for *Aërides odoratum*, simply fixing in the sphagnum over a good drainage of crocks and charcoal, and the foliage will then droop over the sides of the

basket. Give a liberal supply of water during the summer, but less, and with great discretion, during the winter, never allowing the sphagnum to get dust dry, or the plant, having no pseudo-bulbs, will lose its foliage, which is prejudicial to future growth. It should be grown at the warmest part of the house and its leaves occasionally sponged to keep down insects, using tobacco powder if thrip appears.

"Phalænopsis are at times injuriously affected by a watery spot forming on the leaves, and this should at once be cut away with a sharp knife or it will soon spread and eat away the leaf, and generally speaking when this disease occurs the idea of successfully growing the plant may be abandoned. The spot is often produced from some fault in management, such as from a very cold temperature, keeping the plants saturated in winter, or some other cause."

Apart from the slight defects pointed out, "The Amateur Orchid Cultivators' Guide Book" can be recommended to all who take an interest in this phase of gardening. Lists of the most suitable Orchids for warm, intermediate, and cool structures are included, with hints as to the management of the species and varieties enumerated. The work comprises about 150 pages, is well printed, handsomely bound in cloth, and is published, as advertised, at 2s. 6d. by Messrs. Blake & Mackenzie, Liverpool.

NOTES AT MESSRS. KER'S.

At any season of the year something of interest may be seen at the well-kept nurseries of Messrs. R. P. Ker & Sons, Aigburth, near Liverpool. The Cyclamens are nearly over now, there being hundreds of plants carrying substantial looking seed pods; but the Amaryllises and Imantophyllums make a grand display.

The house in which the Amaryllises are exhibited is a span-roofed structure 56 feet by 20 feet, arranged with outside stages and a central bed. The plants are mostly in 5-inch pots, and are in the main carrying two spikes each, many containing four and five flowers on a spike. Some of the flowers measure 8 inches in diameter, and the segments are stout in texture. About 1500 bulbs are in flower, with many more to succeed them, and maintain a display until the end of April. A few of the best varieties are as follows. In the dark kinds I noticed Chancellor, Sultan, Terentian, Black Prince, Crimson King, and Scarlet King, the three latter being superb both for size and colour. Of light reds, Mercury, The Warrior, Endymion, and Momus were excellent. Red and white included Daphne, a splendid large bloom of great texture, certainly the best in its class; Melpomene, Aspasia, and Eurydice; while among the light shades there were Virgin Queen, Fairy Queen, and Albescens.

The Imantophyllums are also models of what can be done by careful hybridisation. There are about 500 plants now flowering. They are of dwarf, robust habit, with stout spikes, carrying a large number of flowers of distinct shades and perfect form. Many other choice plants are to be seen, but with the mention of the two large houses of Kentias I must bring my account of the present visit to a close.—A VISITOR.

ACRES OF WALLFLOWERS.

To see a mass of Wallflowers covering a space of four acres is a sight to behold during the month of April when the plants are fully in bloom, the air being loaded with perfume. The effect of such a mass is so different to that created by a few beds in the flower garden. For the latter purpose the method of culture differs entirely, and for obvious reasons, that the beds are occupied during the summer, and are not ready for the reception of the "Walls," as they are termed by the market men, until the early part and very often the end of October, whereas in the other case directly the plants are large enough to handle easily they are planted where they are to flower, and thus escape the check experienced in flower-bed culture. Plants grown for market are thus enabled to be almost double the size of those cultivated for private use, and give a corresponding return. Sandy land that has been well dug and manured for a previous crop is preferable to that which is heavy in texture for Wallflower culture. Not only is it better for the plants themselves, but the labour in keeping down weeds is less than in heavy soil.

A visit to a market garden disclosed the fact that early preparations had been made, for the next year's supply of Wallflowers were already in a forward state. Two beds, 4 feet wide, and fully 250 yards long, had been sown; in fact, the plants were just showing above the soil, the seed having been sown the last week in March, as much as 12 lbs. of seed being required, which to the inexperienced in market garden culture, will appear an enormous amount. A warm shower coming now would incite the plants to a rapid growth. By this method of culture the first favourable chance can be seized after rain to plant out a large number of seedlings, thus much labour in watering the small plants is saved. The plants are dibbled thinly in rows where they are to flower; thus they grow bushy and produce a number of side branches, and consequently a greater number of flower spikes. The variety is of the ordinary Covent Garden strain, dark red. Where the seed is saved upon the ground it is necessary to exercise care in weeding out faulty plants, or the colour will soon deteriorate.—E. M.



ROSE SHOW FIXTURES IN 1894.

- June 13th (Wednesday).—Colchester.†
- „ 26th (Tuesday).—Westminster (R.H.S.).
- „ 27th (Wednesday).—Windsor (N.R.S.).
- „ 28th (Thursday).—Canterbury, Eltham, and Sutton.
- „ 30th (Saturday).—Sittingbourne.
- July 3rd (Tuesday).—Farningham and Bagshot.
- „ 3rd (Tuesday).—Diss.
- „ 4th (Wednesday).—Croydon and Reigate.
- „ 5th (Thursday).—Hereford and Norwich.
- „ 7th (Saturday).—Crystal Palace (N.R.S.).
- „ 10th (Tuesday).—Gloucester and Wolverhampton.*
- „ 11th (Wednesday).—Hitchin.
- „ 11th (Wednesday).—King's Lynn.
- „ 12th (Thursday).—Bath, Harleston, Woodbridge, and Worksop.
- „ 17th (Tuesday).—Helensburgh.
- „ 19th (Thursday).—Halifax (N.R.S.), Halesworth, and Trentham.
- „ 21st (Saturday).—Manchester.
- „ 26th (Thursday).—Southwell.

* A Show lasting three days. † A Show lasting two days.

Any date of Rose shows, or of other horticultural exhibitions where Roses form a leading feature, not named above, I shall be glad to receive as soon as fixed, for insertion in future lists.—EDWARD MAWLEY, Rosebank, Berkhamsted, Herts.

OUR FUTURE NEW ROSES.

"D., Deal's," remarks, page 264, on doubtful new French productions, in the light of their being acquisitions, are thoroughly to the point. I only wish he had further accentuated his criticism by naming those few Roses which he says Mr. Prince approves, and I trust the latter gentleman will give "D., Deal," the imprimatur to publish the names and descriptions of these desirable varieties. The past winter I fear has done incalculable harm to the greatest of our British hybridisers, as Mr. Dickson of Newtownards in a recent note to me stated his losses of seedlings to have been very great from the effects of the frost on the 5th January. This is much to be regretted, as I know that Mr. Dickson had several promising new Teas. There can be no question that the most valuable additions to our Rose collections in recent years have been Teas, and I hope that in the future we may have additions mostly to this beautiful class, and not, as I notice a prominent rosarian writing recently in a contemporary prognosticates will be the case, to that one which "D., Deal," calls the "mongrel race of Hybrid Teas." A scathing term this, one which I thoroughly enjoyed, appreciated its correctness, and hope it may stick, till ridicule brings a remedy. We do not want ridiculous classification for beautiful varieties of the Rose, or superfluous classes to vex and irritate the uninitiated. I only wish I were privileged to send you the name and the actual words written by one of, if not the very greatest of our professionals on this unnecessary classification. He now regrets his assent to it, and no doubt others do too. But, as I once said in writing about the R.H.S. and their guinea subscribers, are we irrevocably committed to every piece of our committee's work? Is it with us in matters of common sense as with the R.H.S. in regard to guinea subscriptions, have we cut off all retreat? Is it a case of *vestigia nulla retrorsum*? I hope not.—CHARLES J. GRAHAME.

TOO-MUCH-ALIKE ROSES.

A FEW years ago I noticed some most interesting papers in the gardening Press upon the above subject. Since then the National Rose Society has very wisely bracketed several varieties as being synonymous when used for exhibition purposes. It is an indisputable fact that we have many Roses in cultivation under different names which are by no means so distinct as rosarians would like. We must, however, bear in mind that not a few of them are more or less distinct in varying localities; so that it is not safe to be too positive respecting their synonymy. This fact is also recognised by the N.R.S., who note that their synonymous varieties as used for exhibition are not always so in growth and foliage.

One might have thought that the fact of so many varieties having been already considered synonymous, we should not have further duplicates; but more than one of the newer introductions are too much like the older varieties to deserve cultivation under a second name. One which occurs to me most forcibly at present is Ruby Gold. I have not the least hesitation in calling this Rose Jean Ducher re-introduced. Last season, both under glass and in the open, it resembled this older variety so closely that I failed to discover the slightest distinction, and it is the same with blooms now open. In every particular of growth, bloom, and foliage, these two Roses are identical. It may be that I have them untrue, but I much doubt this, as they were procured from one of the most reliable sources in the kingdom. Last spring Mr. George Paul wrote me to the effect that he feared it was an undoubted

synonym with Jean Ducher, and I am more than ever convinced of the fact now.

Although the N.R.S. enumerate several varieties, the list is by no means exhausted. While we have such a number of so-called new Roses introduced each season (many of which are by no means improvements upon existing kinds), and while there is such a mania for imagining most seedlings of only medium merit as quite distinct and worth introduction, we are likely to extend the list of "too-much-alike" Roses. Many which are not actually synonymous certainly bear too close a resemblance to be styled distinct. A hundred or so names might be mentioned, all of which are fully represented in one-third of the number.

The practice of renaming a Rose after it has won honours under a first one, can only tend towards greater confusion. We have two recent instances of this in Turner's Crimson Rambler and Belle Siebrecht. We are not so likely to get confused in the former as in the latter, because The Engineer did not "take" so well at first as Mrs. W. J. Grant. It was under the latter name that we first became acquainted with that grand Irish production of Messrs. Dicksons', and which is now being sent out by an American firm under the appellation of Belle Siebrecht. Many of us remember the flowers staged at the Crystal Palace and at Chester, as well as at various other places during 1892. It even won the gold medal at Chester under its original name, and now we are to forget Mrs. W. J. Grant and install Belle Siebrecht in her place. Such changing of names can do no good, and must result in considerable confusion if extensively indulged in.—PRACTICE.

NOTES FROM HAM, SURREY.

NARCISSUS POETICUS ORNATUS.

MR. J. WALKER, of Ham, Surrey, is probably the most considerable grower of this or perhaps any other popular market variety of Narcissus in the kingdom. His beds cover very many acres, and when ornatus is in full bloom they resemble fields of snow. But then the variety is not naturally a first early bloomer, and as it is so much in demand in the market, not only are enormous numbers of it forced in the huge range of Peach houses at Ham, but many thousands of bulbs are planted in rows close under the warmest sides of the houses. Then from the open fields there are gathered, so fast as the buds seem matured, immense numbers, and these set thickly in water in a warm greenhouse, open not merely soon, but well. I saw in this house last week probably 20,000 gathered buds in all stages of opening, whilst the actual product of blooms of this one variety alone must almost reach to millions. No wonder Daffodils are so abundant and so cheap.

EARLY DUTCH TULIPS.

How wonderfully beautiful these flowers are is admirably demonstrated at Ham when planted in beds some 300 yards long, and running away somewhat undulatingly from the spectator, and in numerous colours, the effect is indeed charming. The Tulip is a somewhat formal flower, but gives to us exceeding brilliance in colour. In that respect it is as great a contrast to the Daffodils as it is in form or absence of gracefulness, yet it is far more effective planted in lines or masses, especially when in great abundance, as here, so as to give striking results. Tulips do not seem to be nearly so popular in a cut form as do the Narcissus, in spite of their rich colouration. The season has been peculiarly favourable for Tulip flowers, as there has been absence of rain and snow and frost, visitations that sometimes come to mar the beauty of our earliest spring flowers. There is no need to mention the varieties of Tulips in bloom at Ham; they are many, and are so beautiful as to command the warmest admiration.

PEACHES AND NECTARINES.

In the nine huge span houses, all planted with Peaches and Nectarines, there is the promise of a wonderful crop. The earliest of all, Alexander, has here, in a few cases given some trouble in bloom dropping, apparently an innate defect of this excellent variety. Still there is on most of the trees a good set. On all others there is abundance. Such a variety as Dr. Hogg is a tremendous setter, and beneath the thinned fruit lie thick as hail. It is not a case of a tree or two, but a large number, running down perhaps the entire side of a house; grand trees, in many cases, now on tall clean stems, and heads that cover large areas. Mr. Walker wishes he had more of the Dymond, as it is a most useful variety. Stanwick Elruge, Lord Napier, and Pine Apple seem to be favourite Nectarines, and really are more profitable to grow than are some Peaches, as they come large and have rich colour. There are numbers of Peaches and Nectarine trees in pots, every one carrying a good crop. It is a huge area of these fruits, and literally tens of thousands of fine ones must be gathered from these houses during the ensuing summer.

SURREY SAND FOR FRUIT.

Accepting the porous sandy loam, which constitutes the soil at Ham Common, as typical of the County of Surrey, most conclusive evidence of its adaptability for fruit culture is produced on Mr. Walker's farm. His fruit trees, now they are in bloom, present a splendid object lesson in fruit culture. To a certain extent it is a natural system, for artificiality in training or pruning is peculiarly absent. It is a sample of fruit culture for market, worth much more than the examples found in private gardens, where cultural and training methods are often so artificial. When one variety of Apple or Pear turns out satisfac-

torily, not merely as a grower and cropper but as a market variety, then Mr. Walker plants about 400 of it. Apples, Pears, and Plums, all of the very best sorts for market, are here blooming magnificently. The trees are on diverse stocks to thoroughly test usefulness, and the weather being kindly there must be a grand fruit crop. A visit to Ham Farm during the fruit season is a liberal education on fruit growing.—A. D.

THE WARMINSTER GARDEN EXPERIMENTS.

VERY elaborate indeed, and costly, is the published report of these proceedings. It rather leads to the inference that the Wilts County Council has plenty of means at its disposal, and there comes from this inference the belief on the part of some, if not of many persons, that a little more real cultural instruction and a little less dabbling in experimental science would probably have been productive of more tangible results. Costing 1s. per copy, the report is hardly likely to fall into the hands of the myriads of cottagers, allotment holders, and others engaged in gardening or desirous of doing so, in whose interests the experiments conducted were presumably instituted.

The report deals with certain experiments conducted in connection with Potatoes and Onions. It opens with a dedication as it were to the Technical Education Committee by its Secretary. Then comes analytical reports by Dr. Munro on the properties of certain soils on which the experiments in question were conducted. All very learned, but of no appreciable cultural use; indeed it is hard to refrain from smiling on reading, at the conclusion of the elaborate analysis of the soil of the Christchurch allotment station, "that it is a free working loam, with fair reserves of fertility, and should yield Potatoes of good quality." Any observant labourer could easily have inferred so much by sight and noting the nature of the crops growing on the ground. There is also furnished by Dr. Munro an analysis of the complete Potato manure used in the various Potato experiments, which shows it to have consisted of 5.37 nitrogen, 4.2 soluble phosphates, and 4.0 of potash per cent. The proportion of nitrogen is however rather greater than is usually advised for Potatoes.

We get to close quarters when the report reaches the experiments, first in relation to winter and spring planting. Now it is really a matter for surprise that in these days anyone should for one moment assume that any possible advantage could result from winter planting. It is so opposed to common sense, and certainly did not need any experiment to lead to its determination. Certain sorts of Potatoes were planted on December 16th, 1892. Result—one-half the sets failed through frost, and the consequent crop very moderate. A similar breadth of ground planted with similar sorts and quantities on March 16th, 1893, gave more than double the produce. If, says the reporter, certain weather had been experienced certain other things might have resulted. What virtue there is an "if," but why should anyone have thought the "if" had any virtue? The autumn planting fad was dissipated years ago.

Then next we come to the result of "close and wide planting." Three perches, otherwise rods, being planted with sets at 22 and 15½ inches, and the same area with sets at 31 × 17½ inches, the result being seven per cent. in favour of the close planting. A much better medium for field culture of the variety used, Reading Giant, would have been 16 by 30 inches, and that difference would have given better results. A width of 22 inches only between the rows is very thick planting. The previous year the wider planting gave the best results. This part of the report starts with the well established truism, "It is doubtful if a continuation of this experiment will lead to any definite conclusions applicable to all conditions; and it is evident that different varieties require different distances, according to habit of growth." All that we knew, like the autumn planting, very many years ago.

Now comes an experiment as to the results in Potatoes obtained from "hand labour in cultivation," presumably, though not stated, as compared with ploughed ground. The three perches of soil hand-worked were trenched 15 inches in depth, not very deep trenching that, certainly. The subsoil, too, was brought to the surface, which, in the case of soil not previously aerated, was bad practice. In any case the product was a crop 10 per cent. heavier on the trenched soil than from the corresponding three perches of shallow worked soil. The reporter seems to think that the additional cost of trenching the ground was not repaid by the moderate increase of crop; but whilst the bringing the crude subsoil to the surface seriously discounted the otherwise good results that should have followed the deeper working, it has been entirely overlooked that trenching, even so shallow as 15 inches, proves to be very beneficial to several successive crops, so that the cost must be cast over several crops rather than over one only.

Next follows experiments with "large, small, cut, and uncut tubers as seed Potatoes," the results justifying what has long been held—that uncut tubers, if well stored and preserved, give better crops than do cut sets of equal weight. Similar results were obtained on a larger trial by a Mr. Jones of Warminster, who gives in each case of Imperator, Masterpiece, and White Elephant all in favour of uncut seed. Of course, it sometimes happens that seed tubers must be cut, rather than they be planted needlessly large and wastefully. To my mind, a far more useful experiment than this—for opinion in favour of uncut sets has long been existent—is that sets of equal size, and number also of the same sorts, be planted; some having been so well stored that the shoots, if made, have been fully preserved, then thinned before planting; whilst the others, having been stored in pits or clams, shall be planted

without disbudding, whether they have previously made growth or not. There are few things in which we are more wasteful than in wrong or careless methods of storing or wintering seed Potatoes. I cannot here but remark that Mr. Jones' returns per acre, even of the heaviest crops, 10 tons, 3½ cwt. per acre compare oddly with the astounding crops recorded as being obtained per acre from the allotment ground.

We now touch under the heading "of Diverse Manures." There were three trials or tests of these with first no manure, farmyard manure, and the complete chemical manure, already mentioned, 3 perches of ground being employed in each case, and all planted with Reading Giant Potato. The first 3 perches without manure gave 732 lbs. or 17 tons 9 cwt. per acre. The farmyard manure gave 873 lbs., or 20 tons 16 cwt., and the complete manure 915 lbs., or 21 tons 16 cwt. per acre. It is not possible to refer to these crops without describing them as marvellous. Mr. Jones' produce was what is commonly regarded as reasonable. These results are absolutely astonishing, nay, they are very hard to believe. Here is soil unmanured, and in one of the driest seasons on record, carrying not less than 17 tons 9 cwt. per acre, truly a wonderful crop. Such a result under similar conditions was never heard of previously. Why, even at this rate, there must be a fortune in Potato culture even at 40s. per ton. When, however, the complete manure at a cost of £3 12s. per acre is added, and the enormous produce of 21 tons 16 cwt. is obtained, it is evident that wealth beyond the dream of avarice may be found in Potatoes. To follow all the various experiments reported upon in relation to manuring would be too tedious, but it is shown that nitrogen in the form of sulphate of ammonia proved to be of great value as a manurial constituent last year, and that was doubtless owing to the drought, which made the salts more active in the dry soil than either phosphates or potash. In ordinary moist seasons the nitrogen would be productive of gross top or stem and leaf growth to the detriment of the tuber crop.

A good deal of information with respect to the action of dressings of bouillie bordelaise on various varieties of Potatoes is afforded, but they serve to show what is now generally understood—viz., that for the prevention of disease in what are established disease-resisting varieties, applications are of no special value. On the other hand, for the checking of the attacks of the fungus on the leafage, and maintaining growth for some three or four weeks later, they have undoubted value, and do materially help to create not only greater bulk, but also more perfectly formed tubers. Last year was one that gave the fungus few opportunities for harm, and throughout the country the Potato crop suffered more from drought than from the disease. Where, however, the soil was deeply worked and retentive the produce was heavy, as may have been evidenced during the winter, Potatoes having been remarkably cheap. Whilst the first early sorts, as a rule, are lifted before the fungus becomes very active, the midseason sorts that are not so robust as the main crop kinds often suffer most, and these most of all probably will pay for spraying with the Bordeaux mixture.

It is rather a matter for surprise to find the profusion of even later varieties than we have advocated. I had thought that in such varieties as Reading Giant, Stourbridge Glory, Colossal, Magnum Bonum, Imperator, Chancellor, and many others, we had Potatoes late enough for all purposes. Very late sorts, that is varieties that only succumbed to November frosts, would be worthless in this country, and most frequently would give only a top and fibre crop but no tubers. We are rather glad than otherwise to be able to lift our late sorts now in September and October, for it is rare they are ripe earlier. With dressings of bouillie bordelaise they would make top growth right up to Michaelmas, late enough in all conscience. The German kinds advocated will not become popular here, and even Imperator is always the lowest price in our markets. I may refer to some trials of Onion maggot insecticides later on.—ALEX. DEAN.

AMARYLLISES AT CHELSEA.

THE Amaryllises at Messrs. J. Veitch & Sons, Royal Exotic Nursery, Chelsea, are once more in the zenith of their beauty, the flowers having expanded rapidly during the past week, and those persons who are desirous of seeing the novelties of the season should not long delay a visit. When viewing the collection as a mass annual superficial observers may not at first sight notice any marked change, but visitors who look keenly into the matter will immediately see that further progress has been made. The improvement cannot, of course, be of an extraordinary character, inasmuch as in the better kinds of Amaryllises the climax has perhaps been almost reached, and therefore the march onwards has become slower in recent years. Still an advance is noticeable, and the result of judicious and persistent cross fertilisation may be seen in more ways than one. In the first place the scapes are considerably dwarfer this year, and while gaining an advantage in this direction they also appear to have added to their former floriferousness. This, indeed, is a characteristic feature of the collection, the majority of the spikes carrying no less than four flowers, and even five or six in some instances. Not a few of the plants, too, have at least two scapes, these presenting on the whole a charming appearance.

Regarded individually the flowers bear a favourable comparison to those of previous years. In form an improvement has undoubtedly been effected, the segments of the more refined varieties being of perfect symmetry. This is an important point, and one which will be more gratifying to all true lovers of the Amaryllis than an increase in the mere size of bloom. There are, however, many tastes to cater for, and occasionally the size is considered the one essential quality of a flower,

but those who view matters in this light cannot be other than satisfied with numerous varieties in the collection now under notice. Many flowers are 8 inches and upwards in diameter. Perhaps, however, the most pleasing feature in reference to these decorative plants is the colour of the flowers. At one time many of the varieties were characterised by greenish rays, which detracted somewhat from their beauty, but these are being gradually eliminated. There are now in the collection at Chelsea numerous flowers of decided self colours, absolutely devoid of any green tint in the segment. The rich dark selfs are very fine, while scarcely less can be said of the flaked or reticulated forms. Mr. Heal, the hybridiser, has cause to be proud of the results of his skill and labour in this direction.

Among the new self-coloured varieties that are flowering this year for the first time, Beauchere stands out like a beacon. This is a magnificent form, the flower being nearly 9 inches across, and a rich crimson shade. The segments, moreover, are well rounded, this resulting in a beautifully moulded flower. There is no doubt that this variety is, in many respects, the best novelty of the year. Clarendon is another splendid dark self, the scape of this being dwarf, and bore three flowers of gigantic proportions. A still darker colour one finds in Quintus, a purplish shade being noticeable in this well-shaped bloom. Petrina is a showy variety with large, bright red flowers, four of which were noticeable on one scape. As its name implies, Splendour is a gorgeous bloom, being of huge size and rich crimson colour; while in Avontes one has a beautiful scarlet flower of excellent form. These are two of the best new kinds of the season, and besides being exceedingly prolific are dwarf in habit. Olympia has crimson segments, and an award of merit has already been adjudged this variety. A new break as regards colour exists in Petronel, the flowers of this novelty having a decided magenta tint. The blooms have a refined appearance, being perfect in shape, large, but devoid of coarseness. Vandyke is one of last year's varieties, but it is in splendid condition this season, and for brilliancy can well hold its own. The flower is very broad when expanded, and the segments of bright scarlet colour, suffused with dark crimson towards the centre.

With respect to the light coloured forms a change here is also noticeable. As has been remarked the creamy or greenish tint which to a certain extent has hitherto marred the appearance of some varieties is by degrees giving place to pure whiteness, and it is very probable that in the near future the evulsion will be completed. There is good reason to look forward to this, if one may judge by the new variety Cleola, the segments of which are pure white, striped rosy pink. This is quite distinct from any other light-coloured form. Pearl is a charming variety, the same also applying to Jocasta and Le Belle, all of which have light grounds. Princess May is a flower of a similar character, and in Her Majesty, a recent introduction, a broad white central band is seen on each segment. Olivia has a French white ground, striated with rosy scarlet; and although now comparatively old, Fairy Queen, which is white striped with crimson, still retains its position among the light forms. There are many other varieties of sterling merit, and during the ensuing week it is probable that more novelties will be forthcoming as the various hybrids expand their flowers.—C.

WATERING WALL TREES.

AFTER so long an absence of rain many plants will require attention in the way of watering which would not do so thus early in the season during ordinary weather. Trees of all descriptions growing on walls claim special attention in this direction, and will in the majority of instances be greatly benefited by liberal applications of tepid water. I am convinced that hundreds of Peach trees on outside walls every year fail to set a good crop of fruit early because they are too dry at the roots during the flowering period. Many others cast much of their fruit in a young state for the same reason.

Trees growing in houses generally receive good attention in this respect, because the cultivator is well aware that they are entirely dependent upon artificial waterings; but we are inclined to overlook such simple facts as these—viz., that the coping boards used for protection keep much rain from the roots of outside trees, and that the ground within 2 or 3 feet of the wall is so hard from being continually trampled upon to cover and uncover that it is difficult for the rain to penetrate when it does come.

It is highly important to see to this matter at once, as it may make the difference between a full crop and a very light one. If the whole of the trees cannot receive this necessary attention, examine them thoroughly, and water those that appear to be dry, paying special attention to Peaches, Nectarines, and Apricots, which, according to my experience, are the most susceptible to the injurious effects of dryness at the roots.—H. DUNKIN.

SOUVENIR DE LA MALMAISON CARNATIONS.

I WAS pleased to see Mr. Dunkin's article in the *Journal of Horticulture* for February 8th upon the successful culture of these Carnations, for it is indeed distressing to see healthy plants attacked with eel-worm, or still worse that troublesome disease, *Helminthosporium*, which seems to have become the general complaint from various parts of the country. I have received plants from various parts, and in every case the plants were, or had been attacked with this disease. Mr. Dunkin's treatment is in accordance with my own, for I am convinced

that it is a mistake to water freely, and especially so to be too liberal with manure. Since I have watered more sparingly, and made greater use of the syringe, keeping a damp atmosphere about the plants, the disease has been checked considerably, the plants making strong, clean growth.

I have watched the disease, *Helminthosporium*, closely, and I find the small black spot on the leaf spreads rapidly and when ripe the skin bursts; the fungus, which much resembles Fern spores, being distributed by the air from the ventilator. Being much perplexed as to the best means of destroying the disease I determined upon employing the syringe freely, using warm water, and turned the plants on their side to prevent the water passing through the soil. I continued this treatment until I had washed the ripened spores away, and now I find by damping the plants once a day, or twice on a bright sunny day, the fungus does not ripen, consequently is not distributed. I think there can be little doubt that some situations and the air in different parts of the country are more favourable to its growth than in others.

The main points in the successful cultivation of *Souvenir de la Malmaison* Carnations seems to me to be young plants, firm potting, small shifts, using the syringe more freely than the water pot, and to be very sparing in the use of manure, growing the plants on some absorbent material.—H. PROSSER, *The Knoll Gardens, Wimborne*.

PRUNUS PISSARDI.

A SCOTTISH correspondent writes:—"I was much interested in the note and illustration of *Prunus myrobalana rosea plena* on page 267 of the *Journal of Horticulture* for April 5th, and agree with you that the early flowering trees and shrubs should be more extensively employed. The variety figured last week would prove a useful companion to *Prunus Pissardi*, which is now flowering profusely in my garden. The latter kind is deserving of being more generally cultivated."

We, too, think that *Prunus Pissardi* should be "generally cultivated," for it presents a charming appearance when in bloom, as will be seen by a glance at the spray depicted in the illustration (fig. 47). It is chiefly known and valued for its richly coloured foliage; it is also useful for early flowering under glass, and in this way is now employed in some gardens. The flowers are white, or with a faint tinge of pink. They are produced most abundantly, and in contrast with the dark coppery leaves just appearing, they look extremely well. The tree is of slender, graceful habit, and seems to be well adapted for culture in pots. It is readily forced, and lasts for some weeks.

When the leaves are fully expanded out of doors the tree has a striking effect amongst green leaved or variegated shrubs, the colour being a distinct reddish or coppery bronze—quite a metallic tint. It does not appear to be particular as to soil or situation.

ROYAL HORTICULTURAL SOCIETY.

APRIL 10TH.

BRIGHT and beautiful weather prevailed on this occasion, and there was a large display of bloom at the Drill Hall, James Street, Westminster. Hardy cut flowers were extensively staged, as also were Roses in pots. Orchids, too, were well represented. A new rule of the Orchid Committee appears to have been passed excluding reporters from one side of the hall, though it was noticed that several ladies and gentlemen, with their gardeners, were permitted to view the exhibits in close proximity to the Committee. For the reason indicated we are compelled to curtail our report, also descriptions of new plants, there not being time, after the general public were admitted to that section, to prepare for going to press. We shall be glad to know if any of our reporters have abused the opportunities that have been accorded them for many years.

FRUIT COMMITTEE.—Present: Philip Crowley, Esq. (in the chair); with Dr. Hogg, Messrs. H. J. Pearson, John Lee, T. F. Rivers, J. H. Veitch, G. Bunyard, G. Taber, G. W. Cummins, A. Dean, A. J. Laing, W. Bates, G. Wythes, T. Glen, J. Hudson, J. Smith, J. Willard, G. Goldsmith, C. Herrin, and J. Wright.

Only comparatively few products were placed before the Committee for examination. Mr. A. R. Allan, Hillingdon Court Gardens, Uxbridge, sent boxes of *La Grosse Sucrée* Strawberry, large, firm, well-coloured fruits, meriting the cultural commendation awarded. Mr. G. Wythes sent a box of fruits of the Dwarf Syon House, Keen's Seedling Strawberries, also a plant, as well as a much taller one, and "drawn" of the true Keen's Seedling. The dwarf form was recommended to be tried at Chiswick.

Mr. Owen Thomas, Royal Gardens, Windsor, sent a dish of the *Frogmore Prolific* Tomato. The fruits were medium sized, symmetrical, firm, well coloured, and of good flavour. It was suggested that a fruiting plant be seen at this season of the year, and the variety, which is a promising one, be grown in the trials at Chiswick.

Mr. Crook, The Gardens, Forde Abbey, Chard, sent admirably kept bulbs of his Long Keeper Onion; also Royal Somerset, Striped Beefing, Sturmer Pippin, and Cox's Orange Pippin Apples—all creditable examples. A vote of thanks was accorded, and the Onion recommended to be tried at Chiswick.

Several Pears were sent from the Cape, and though a few were well coloured, they were not as a rule equal to well-grown English fruit. A dish of *Easter Beurré* was sent from Chiswick. The fruits were small, but excellent, and it was stated the variety had been in use from Christmas to the present time.

Mr. G. Wythes exhibited a collection of produce, including fruits of *Monstera*, Figs and Strawberries, also Asparagus, Cabbages, Potatoes, and Seakale, the latter being unusually large, but not Lily white in colour. A bronze medal was recommended.

FLORAL COMMITTEE.—Present: W. Marshall, Esq. (in the chair); the Rev. H. H. D'Ombraïn, Messrs. J. Fraser, J. Laing, H. B. May, C. F. Drury, H. Herbst, R. Dean, C. J. Salter, C. F. Bause, J. Jennings,



FIG. 47.—PRUNUS PISSARDI.

E. Beckett, J. H. Fitt, T. Godfrey, C. E. Shea, C. E. Pearson, J. D. Pawle, O. Thomas, H. Turner, T. Baines, G. Nicholson, G. Gordon, and R. Owen.

Mr. W. Rumsey, Joynings Nurseries, Waltham Cross, staged a handsome collection of Roses in pots, and also cut blooms. Amongst the best were *Marguerite de Roman*, *Chas. Le'ebvre*, *May Rivers*, *Reine Marie Henriette*, *Sénateur Vaisse*, *Fisher Holmes*, *Dr. Andry*, *Niphotos*, *Général Jacqueminot*, *Grace Darling*, and *Madame Hoste* (silver Flora medal). The collection of Roses, hardy and tender plants and flowers sent by Messrs. Paul & Son, Old Nurseries, Cheshunt, formed one of the best features of the Show. The Roses, which were splendidly grown plants, included *Souvenir de S. A. Prince*, *J. D. Pawle*, *Mrs. J. Laing*, *Gustave Piganeau*, *Alphonse Soupert*, *Jean Ducher*, *François Levet*, *Innocente Pirola*, *Paul's Early Blush*, *Céline Forestier*, and *Madame Hoste*. Noticeable too in this exhibit were *Cannas Sunset*, *Aurora*, *L. E. Bailey* (award of merit), and *Marquise de l'Aigle*, *Pyrus* and *Prunus* in variety, *Amaryllises*, *Caltha monstrosa plena*, *Cerasus Watereri*, *Magnolias*, *Ribes* in variety, *Daffodils*, and *Rhododendrons* (silver-gilt Flora medal). Mr. George May, King's Road, Upper Teddington, showed blooms and plants of *Clove Carnation Uriah Pike* in good condition. G. F. Wilson, Esq. Weybridge, staged blooms of bunch Primroses or yellow Polyanthus. Blooms of *St. Brigid* Anemones (award of merit, see below) were sent by Mr. Fitt, Pans-

hanger Gardens, Hertford, and also flowering sprays of *Storax officinalis*. A charming collection of hardy plants was exhibited by Mr. B. Ladhams, Shirley Nurseries, Southampton, which included Pink Ernest Ladhams in fine condition, Daffodils in variety, *Phlox amœna*, *Aubrietias*, *Spiræas*, *Anemones appenina* and *fulgens* (bronze Banksian medal).

Messrs. J. Laing & Sons, Forest Hill, showed plants of *Nicotiana affinis variegata*. Daffodils and other hardy flowers were staged in magnificent condition by Mr. T. S. Ware, Hale Farm Nurseries, Tottenham. The Narcissi included *Emperor*, *Sulphureus plenus*, *Agnes Barr*, *Johnstoni*, *poeticus ornatus*, *Horsefieldi*, *Barri conspicua*, *Nelsoni aurantius*, and *Albicans*. Amongst the Irises were *atropurpurea* and *olbeiensis purpurea grandiflora*. *Anemones* were well represented by *fulgens* and *Rose de Nice*, a charming double variety. *Muscari*, too, were good, as also were *Primulas* of the Sieboldi type (silver Flora medal). Messrs. Wm. Cutbush & Sons, Highgate, staged a collection of flowering plants, comprising *Acacias*, *Ericas*, *Azaleas*, *Staphylea colchica*, plants of *Calla Little Gem*, splendidly flowered, and *Epacris* (silver Flora medal). An interesting group of hardy shrubs in flower was exhibited by Messrs. J. Veitch & Sons, Chelsea, and was composed of *Cytisus purpureus pendula*, *C. scoparius Andreanus*, *Rhodora canadensis*, and *Chionanthus virginicus* (silver Banksian medal). A group of Polyanthus of various colours was arranged by Mr. R. Dean, Ranelagh Road, Ealing (silver Banksian medal). Mr. G. Mount, Rose Nurseries, Canterbury, staged some beautiful cut Roses, including *Maréchal Niel*, *Niphetos*, *Catherine Mermet*, *The Bride*, *Souvenir d'Elise Vardon*, *Innocente Pirola*, and *Cleopatra* (silver Banksian medal). An award of merit was accorded for *Atragene alpina*, staged by Messrs. T. Cripps and Son, Tunbridge Wells, which is described below. A small group of *Amaryllises* was arranged by Messrs. J. Veitch & Sons. The varieties included *Cecilia*, *Surasion*, *Speculum* (award of merit, see below), *Cato*, and *Titan*. Finely flowered plants of *Epiphyllum Russellianum Gartneri* were also exhibited by Messrs. Veitch & Sons. A vote of thanks was accorded to the Right Hon. J. Chamberlain, Highbury, Birmingham, for a leaf of *Anthurium Chamberlainianum*. A first-class certificate was accorded to H. J. Elwes, Esq., Colesborne, for *Iris (Onocylus) Helena*. For blooms of *Rose Lawrence Allen* Messrs. G. Cooling & Sons, Bath, received an award of merit (see below).

Clivias, *Dielytra spectabilis*, and *Amaryllises* were splendidly shown by Messrs. B. S. Williams & Son, Upper Holloway. Dr. Masters, *Emperor Frederick*, *Macrantha*, and *Holloway Belle* (see below) were the best of the latter. The *Clivias* included *Ambrose Verschaffelt*, *Lindeni*, and *Holloway Beauty*. A seedling *Rhododendron* named *Madame Cuvelier*, greatly resembling *R. fragrantissimum*, was also staged by the same firm (silver Banksian medal). Messrs. Hugh Low and Co., Bush Hill Park Nurseries, Enfield, showed a group of flowering plants, including *Azaleas*, *Ericas*, *Boronias*, *Eriostemon buxifolium*, and *Acacias* (silver Banksian medal). Messrs. Barr & Son, King Street, Covent Garden, staged fine collections of Tulips and Narcissi, but owing to the exclusion of the press from that side of the hall a detailed report cannot be given. Mr. Frank Cant, Colchester, staged splendid blooms of *Roses*, amongst which were *Madame de Watteville*, *Souvenir d'Elise Vardon*, *Marie Van Houtte*, *Maréchal Niel*, *The Bride*, *Anna Ollivier*, *Souvenir de S. A. Prince*, *Jean Ducher*, *Cleopatra*, and *Rubens* (silver-gilt Flora medal). Messrs. R. Veitch & Son, Exeter, showed flowering sprays of trees and shrubs. Mr. A. Waterer, Woking, exhibited a plant of *Cedrus atlantica aurea*. Capt. Torrens, Hayes, Kent, sent a plant of *Wistaria sinensis purpurea* grown in a pot, and A. Bartholomew, Esq., Reading, a plant of *Iris Robinsoniana* in flower.

ORCHID COMMITTEE.—Present: Sir Trevor Lawrence (in the chair); Dr. Masters, Messrs. J. O'Brien, W. H. Protheroe, Walter Cobb, E. Hill, J. Jacques, W. H. White, J. T. Gabriel, J. Douglas, H. J. Chapman, H. Williams, H. Ballantine, H. M. Pollett, and De B. Crawshay.

Messrs. Hugh Low & Co., Clapton Nursery, London, sent a beautiful group, comprising some fine *Dendrobiums*, *Cattleyas*, *Odontoglossums*, *Cypripediums*, *Phaænopsis intermedia Portei*, and *Aërides Hughii* (silver Flora medal). Messrs. W. L. Lewis & Co., Southgate, N., contributed a neat collection of Orchids, tastefully arranged. Amongst others noticeable in this group were *Cattleya Mendeli*, *Cymbidium Lowianum*, *Vanda tricolor Lewis' var.*, and *Coelogyne Massangeana* (silver Banksian medal). A small but choice group was arranged by Mr. P. McArthur, the London Nursery, Maida Vale, W. A fine plant of *Cymbidium Lowianum* was noticeable in this contribution, as were *Cypripedium Exul*, *C. Lawrenceanum*, and *C. Chamberlainianum excellens* (silver Banksian medal). A. H. Smee, Esq., The Grange, Wallington (gardener, Mr. W. G. Cummins), staged a fine plant of *Cyrtopodium Godseffianum* and *Lycaste cruenta gigantea* (award of merit).

Messrs. J. Veitch & Sons, Royal Exotic Nursery, Chelsea, exhibited some choice hybrids. These included *Cypripedium* × *Macrochilum*, *C.* × *Merops*, *Chysis* × *Chelsoni*, *Lælio-Cattleya Pallas*, *Masdevallia* × *Glaphyrantha*, *Dendrobium* × *Alcippe*, and *D.* × *Wardiano-japonicum*. W. S. Ellis, Esq., Hazelbourne, Dorking (gardener, Mr. Masterion), sent plants and cut flowers of Orchids, including an *Epidendrum* (first-class certificate), fine specimens of *Odontoglossum gloriosum*, and *O. Andersonianum*, with *Lælia Boothiana* (award of merit). C. J. Lucas, Esq., Downham Court, secured an award of merit for an *Oncidium* species. O. J. Hollington, Forty Hill, Enfield, gained a first-class certificate for *Cypripedium Winifred Hollington*, a very fine hybrid, which is described elsewhere. Messrs. Collins & Collins, Cumberland Park, Willesden Junction, staged some splendid plants of *Cymbidiums* and a small collection of *Cypripedium hirsutissimum* (silver Banksian medal).

We also learn from the official lists supplied us that the Orchid

Committee recommended a silver Flora medal to Sir Trevor Lawrence, Bart., Messrs. F. Sander & Co., and Baron Schröder, and a silver Banksian medal to R. J. Measures, Esq., Camberwell, for groups of Orchids. Messrs. Barr & Son were also, we understand, recommended a silver Flora medal for a collection of hardy flowers.

CERTIFICATES AND AWARDS OF MERIT.

Amaryllis Holloway Belle (B. S. Williams & Son).—A very fine bright coloured form. The segments are broad, striated, bright scarlet, the centre of each having a white stripe (award of merit).

Amaryllis Speculum (J. Veitch & Son).—This is a splendid variety, the flower is of a good size, and bright crimson colour to the base of the segments (award of merit).

Anemone St. Brigid (J. Fitt).—The blooms of this well-known strain exhibited were very fine (award of merit).

Atragene alpina (T. Cripps & Son).—A charming plant with pale blue Clematis-like flowers (award of merit).

Canna L. E. Bailey (Paul & Son).—A good variety with yellow flowers densely spotted with crimson (award of merit).

Cypripedium Winifred Hollington (A. J. Hollington).—An attractive hybrid, the result of a cross between *C. Celola* and *C. niveum*. The sepals and petals pale pink, veined with crimson, both front and back having a hirsute surface. The lip is rosy purple, lighter at the base (first-class certificate).

Dendrobium crepidatum, *Tring variety* (Lord Rothschild).—This is a very fine form. The sepals and petals are blush white, margined rosy mauve, as is the lip, the centre being orange yellow (first-class certificate).

Epidendrum (species?) (W. S. Ellis).—A charming species introduced from Columbia, but no specific name was given. The sepals and petals are bright rosy mauve, the lip being a lighter colour, passing to nearly white in the centre (first-class certificate).

Iris (Onocylus) Helena (H. T. Elwes).—A rich coloured Iris, the standard being purple, the falls passing to velvety deep maroon in the centre (first-class certificate).

Lælia Boothiana (?) (W. S. Ellis).—A bright flower with rosy mauve sepals and petals. The base of the lip is of a similar colour, the throat being veined rich crimson (award of merit).

Lycaste cruenta gigantea (A. H. Smee).—This is a desirable form of a well-known species. The flowers being comparatively large and of a bright yellow colour (award of merit).

Oncidium (species?) (C. J. Lucas).—A slender growing unnamed species, with small greenish yellow flowers, the lip being tinted reddish brown (award of merit).

Rose Lawrence Allen (G. Cooling & Sons).—A blush pink Hybrid Perpetual Rose of good shape (award of merit).

Vanda Hughii (Hugh Low & Co.).—This is an exceedingly pretty kind, named in memoriam of the late Mr. Hugh Low. The sepals and petals are light coloured, spotted and suffused magenta, the lip being of a similar shade (award of merit).

In addition to the plants described above, the following, according to the official records, were adjudged first-class certificates and awards of merit, but for the reasons already stated we are unable to publish descriptions of them. First-class certificates:—*Eulophiella Elizabethæ* (figured in the *Journal of Horticulture* for September 22nd, 1892) and *Dendrobium Falconeri giganteum* (Sir Trevor Lawrence, Bart.); *Brassia Lawrenceana* (R. J. Measures, Esq.). Awards of merit:—*Oncidium Lucotianum* (F. Sander & Co.), *Dendrobium Alcippe* (J. Veitch and Sons), *Dendrobium Capillipio* (Sir Trevor Lawrence, Bart.), *Cypripedium Mastersianum* (R. J. Measures, Esq.), and *Odontoglossum Andersonium* (De B. Crawshay, Esq.).

LECTURE ON HYBRID NARCISSI.

A lecture on the above subject was delivered at the afternoon meeting at the Drill Hall by the Rev. G. H. Engleheart, Dr. Masters occupying the chair. The subject was treated throughout in an interesting and highly instructive manner, and was much appreciated by the company present.

Mr. Engleheart, in opening, referred at some length on the objects of cross-fertilisation in general, and having special reference to Narcissi, spoke of the discoveries that had been made during recent years in so far that many which had hitherto been regarded as distinct species were now known beyond a doubt to be only varieties, the result, in all probability, of natural hybridisation. He mentioned particularly Dean Herbert, and Messrs. Barr, Leeds, and Backhouse as having made early and lasting efforts in the cross-fertilisation of these plants. It was the first named gentleman who originally surmised that some of the so-called species were not so at all, but only natural hybrids, but was not able to prove it, and so left it for others to do so. The lecturer mentioned the one great impediment which stood in the path of Narcissi hybridisers, inasmuch as they had to wait at least three years after the sowing of the seeds before flowers were produced, and then they would be undeveloped, five or six years being generally required before full development was reached and a true knowledge of the bloom obtained.

The objects of the hybridist might well be divided into three: firstly, to improve existing forms; secondly, to reduce to a science what has hitherto been mainly the results of chance, or in other words to know what to advise their successors to cross with the greatest chance of ultimate success; and thirdly, to verify, supplement, and correct the work of their predecessors. To commence with, said he, it was necessary that the hybridist who intended to go thoroughly into this interesting work, to acquaint himself, as far as possible, with the probable

origin and parentage of the natural hybrids which were to be found in such numbers. They had to emulate what had been done before them by the gentlemen previously named, and who were remembered with gratitude by workers of to-day for the good work they had so well begun.

The lecturer then proceeded to mention many varieties which were supposed to be species until the question was raised and a doubt expressed by Dean Herbert, whom he considered one of the pioneers in the cross-fertilisation of *Narcissi*, *N. montanus* being quoted as a well known example, and the origin of which had since been proved, practically beyond doubt, to be the result of a natural cross between *N. poeticus* and a white trumpet kind. Another instance was named in *N. gracilis*, a short cupped variety of much beauty, which was a cross between *N. poeticus* and *N. Jonquilla*. In determining the parentage of many varieties the lecturer had found, as had doubtless many other successful hybridisers, that the scent was a very material assistance, it being transmitted to the hybrids often in a very marked degree. Numerous other results of crosses were mentioned, and the words admirably illustrated by many forms crossed by the lecturer gathered from his own garden for the purpose. In conclusion, he gave it as his opinion, gleaned from several years of experiments and incessant observation, that the effect of the pollen-bearing parent was pre-eminent, sometimes, especially in the case of *N. poeticus*, almost annihilating the other parent.

At the close a vote of thanks was accorded to Mr. Engleheart for his instructive address, and to Dr. Masters for presiding.



HARDY FRUIT GARDEN.

Outdoor Figs.—If carefully and thinly trained during the previous summer and autumn there needs in spring but little pruning. Where the wood, however, is too thickly placed there cannot be a better time to remove the oldest and most unprofitable portions, which will afford space for young and vigorous shoots. Do not hesitate to dispense with any shoots which will crowd the trees. Fruitfulness on wall-trained trees is largely dependent on this, though the roots require at the same time a firm run in friable calcareous loam with a well-drained subsoil. In pruning do not shorten young shoots of last year, as upon these, towards the extremities, the fruit is borne. It is only in warm sheltered positions that Figs can be successfully cultivated on walls and gable ends, while still more favourable conditions are requisite for the cultivation of standard trees in the open. If planting is contemplated prepare the ground, and plant one-year-old trees during the present month.

Protecting Espallier Fruit Trees.—Should frosty nights ensue, or cold, wet, and otherwise unfavourable weather present itself during the time the blooms of choice trees are expanded, a little temporary protection will probably insure a set of fruit. Espallier trees, as a rule, not being high, are not difficult to cover effectually. Light hurdles, such as are used for folding sheep, may be utilized; one being placed down the side or front, another resting on the top and leaning over the trees towards the opposite side, where it may be supported by a pole at each end. The hurdles being thinly thatched with straw or dried bracken will afford sufficient protection. A similar arrangement of light poles or Bean sticks placed over the trees at intervals, and tied together at their junctions with one another, will afford rests for strips of tiffany or canvas, mats, or any material which will serve as temporary protection.

Protecting Bush Trees.—For these, where not too large, the plan of tying three or four light poles together at one end, of a length sufficient to reach above the tops, spreading them out round each tree, answers well as a framework, upon which protecting materials can be easily wound or removed as necessary.

Thinning Fruit Blossom.—This may appear a tedious operation to recommend, but it is one which might with advantage be performed on many trees that are developing an overplus of blossom. If any doubt exists as to the advantages arising from dispensing with two-thirds of the blossoms, try the experiment fairly on a few trees, and note the results in comparison with others left with the full burden of bloom. Blossom developing is an exhaustive process, and no tree can perfect it all when there is a superabundance. Thinning, therefore, is quite a rational proceeding, relieving the trees to a great extent, and at the same time strengthening the remaining flowers. Unsuitably placed clusters might first be removed, afterwards clip out the individual blooms that may appear crowded, selecting both old and young flowers.

Hoeing Fruit Quarters.—Where the ground is not mulched with manure, the present, whenever the soil is dry on the surface, is most suitable time to hoe over and cut down prominent weeds which may be advancing, also at the same time staying the rapid progress of numbers of seedling weeds. Young fruit trees and recently planted or established Strawberry plantations will be much benefited by a loose surface layer of soil caused by occasional use of the Dutch hoe. Hoeing also imparts a tidy aspect to the garden.

Forking among Fruit Trees.—The winter mulching of manure which perhaps has lain some months over the roots of fruit trees may now with advantage be lightly forked into the surface, though not to disturb the roots. If many roots of a fibrous character are near the surface rake off the loose dry particles. The ground thus loosened might with advantage be sprinkled with soot, especially under and among Gooseberry and Currant bushes. A peck of fresh, pungent soot to a rod of ground will be a good dressing.

Strawberries.—New plantations may yet be formed, though planting should be done without delay, and, if possible, plants obtained from nursery beds, whence they can be lifted with plenty of soil adhering to the roots. Such plants will experience no check if carefully transferred to the needful sized holes or trenches provided, making the soil firm about them. Those planted earlier this spring may receive a good soaking of water or liquid manure, hoeing freely between the rows when the weather is dry. Weakly plants ought not to be allowed to flower. Most Strawberries planted early last autumn will bloom and fruit well this year; therefore any strong plants that exhibit signs of barrenness ought to be promptly discarded, as such invariably remain unfruitful in future years.

FRUIT FORCING.

Peaches and Nectarines.—*Earliest Forced House.*—Discontinue syringing when the fruit commences to ripen, or it will cause the skin to crack and impart an unpleasant flavour. It is very important to have the trees quite free from insects by the time the syringing ceases, as it must when the fruit commences ripening. If there be the least trace of red spider apply an insecticide, and follow shortly afterwards with a forcible syringing, repeating the process if necessary, so as to thoroughly free the trees from the pest. It is only the very early varieties that will be ripening, the others must be well syringed, and have abundant supplies of water and surface mulchings of short manure or rich material.

Second Early Forced House.—Trees started at the new year are more advanced than usual, being accelerated by the mild and bright weather. The fruits are now stoning, and will need care in preventing checks from sudden fluctuations or depressions of temperature, the night temperature being kept steady at 60°, with 5° more on mild nights; whilst on cold nights it may fall to 55°, 65° by day artificially in dull weather, 70° to 75° on cloudy days, but with clear intervals, ventilating from 70°, and freely above 75°. Attend to tying-in the shoots as they advance, and encourage no more growths than will be required for future bearing, the extension of the trees, and the swelling of the current crop. The trees must not lack moisture at the roots, affording liquid manure if they are heavily cropped and not making satisfactory growth; but avoid undue excitement to trees in full vigour, as any impulse given to growth during the stoning is apt to affect the process disastrously. Syringe twice a day in bright weather, and if necessary apply an insecticide, it being imperative that the foliage be kept clean.

Trees Started in February.—Thinning should commence when the fruits are the size of Horse Beans, removing the smallest and those on the under side of the shoots. Retain sufficient to admit a further thinning when they are the size of marbles, and then only a few more need be left than are required for the crop, leaving those that are best situated for receiving air and light. Disbudding must not be neglected, and laying in the growths required for next year's bearing will need careful and timely attention. Syringe the trees twice a day when the weather is bright, occasionally only when dull, and let the second syringing be at closing time or early in the afternoon, so as to have the foliage fairly dry before night. Increase the temperature to 55° or 60° at night, 60° to 65° by day, ventilating from the latter, and increasing it with sun heat to 70° or 75°.

Trees Started in March.—Many more fruits have set than can possibly be brought to perfection, and an over-set is a source of great weakness, often causing the fruit to be cast in showers, leaving but a scanty crop. There is no remedy but to thin the fruits as soon as it can be seen which are taking the lead in swelling, but it is better prevented by well thinning the flowers before they expand. Disbud gradually, for severe shoot removal favours growth of wood only, and sometimes gives a severe check to the fruits, causing them to drop. Syringe so as to enable the fruits to throw off the remains of the flowers, but avoid heavy syringing at this stage, as the foliage can evaporate little when wet; indeed the stomata remain closed under water, and elaboration is greatly impeded. Ventilate early and freely, so as to secure thoroughly solidified growth. A temperature of 50° to 55° will be sufficient, not allowing an advance above 65° without free ventilation.

Late Houses.—A splendid display of blossom and a grand smell of nectar characterises the trees generally in these structures. There ought not to be anything neglected that is likely to insure the perfect fertilisation of the flowers, as without it fruit cannot attain perfection. Many of the late Peaches have large blossoms, and these often have the anthers deficient of pollen. Attend, therefore, to fertilising the flowers, not trusting to bees, which, however, effect the process very effectually, but they seem to be so hindered by the glass that they fight shy of fruit houses. It is not the difficulty of getting in, but of egress from the structure that bothers the bees, for when loaded they are troubled about nothing but carrying the nectar and pollen to their homes, and many succumb to the frantic endeavour made to take a direct flight. Secure a temperature of 50° by day, and ventilate freely, allowing an advance to 65° from sun heat. Leave a little air on constantly. Where there is a superabundance of blossom remove all on the under side or back of

the shoots, and, though this is best done before the flowers expand, it will materially aid the setting and swelling of the young fruit.

In unheated houses observe 50° as the point for admitting air, and increase the amount with the advancing sun heat, not allowing an increase to or over 65° without full ventilation. Attend to fertilising the flowers, choosing the early part of fine days, always when the blossoms are fully expanded and the pollen flying in a cloud of gold-like dust when the anthers are disturbed. There must not be any deficiency of moisture at the roots. When there is an appearance of frost the house may be closed a little earlier, otherwise close at 50°.

Melons.—The fruits of the earliest plants are growing large and must have the support lowered, while those commencing to swell should be provided with them. Stop the laterals frequently and thin them where they are crowded. Afford water or liquid manure copiously to plants on which the fruits are swelling, but avoid excess of liquid manure or top-dressings likely to injure the roots, or the fruit in consequence of loss of feeders may not finish satisfactorily. Plants coming into flower should only have water to prevent flagging, and a drier condition of the atmosphere is essential to a good set, especially so in the case of vigorously plants.

Attend regularly to setting the blossoms. Stop the shoots one joint beyond the flowers when impregnated, and after the fruits are set pinch the sub-laterals to one leaf and remove superfluous growths. Avoid giving stimulants to plants until the fruit is swelling, when liquid manure may be afforded liberally, especially to plants carrying heavy crops, until they are well advanced towards ripening. Maintain a night temperature of 70°, 70° to 75° by day, and 85° or 90° for sun heat, and close early so as to run up to 90° or 100°. Ventilate freely in favourable weather, closing early with plenty of sun heat, when the plants may be syringed lightly, except such as are in flower. If canker appear at the collar rub it out with fresh slaked lime, repeating if necessary.

Cucumbers.—Grand fruit is the result of the good progress made under the brilliant weather. Attend to tying out the growths, stopping one or two joints beyond the fruit, removing bad leaves and exhausted growths, so as to maintain a succession of healthy fruitful shoots. Water will be needed copiously by plants in houses, and liquid manure once or twice a week may be given with advantage. Syringe the foliage and walls daily at closing time or about 3.30 P.M., and damp the house well in the morning and in the evening. Shade only to prevent flagging. Available surfaces may be sprinkled in the evening occasionally with liquid manure, or fresh horse knobs sprinkled on the bed will answer the twofold purpose of evolving ammonia to the benefit of the foliage, and supply nutriment to the soil, as well as encouraging surface roots.

Plants in pits and frames will hardly need shading as yet, but they must not be allowed to flag. Use tepid water through a fine-rose watering pot at about 3 P.M., closing the lights at the same time; but as the nights are yet cold, be careful that the foliage becomes dry before dark. Close early, employing a thick covering, as a double thickness of mats. Maintain a good bottom heat by linings, renewing them as necessary. Preserve a night temperature of 70°, 70° to 75° by day, 80° to 85° or 90° from sun heat, ventilating from 75°, being careful to avoid cold and drying currents of air, and close sufficiently early to run up to 90° or more. Sow seeds of ridge varieties, and keep young plants of these and other kinds near the glass.

THE BEE-KEEPER.

APIARIAN NOTES.

WE have experienced cooler weather since the end of March. The night temperature has been 3° to 5° higher, but during the day from 10° to 13° lower than the preceding fortnight. Bees have therefore been confined to their hives the greater part of each day. This was not to be regretted, as where they are well supplied with honey and pollen breeding goes on uninterrupted without loss of bees. It is a great advantage during the spring for bees to have an abundant supply of autumn gathered pollen. It enables them to carry on the breeding to the fullest extent without the attendant loss of eggs, as well as bees, the former being destroyed and the latter lost when foraging during bright glimpses of sunshine in bleak weather. But to have wholesome autumn gathered pollen in the spring the hives must be wintered in a rational manner, so that the pollen be not affected by mildew through damp.

Owing to the advanced state of my hives I shall keep a strict watch that none suffers through want of a little timely feeding, but those not requiring it are better to be left alone. My best stocks are those that never have been fed beyond a few pounds of syrup in the autumn to insure safe wintering. The rich Heather stores are best for breeding purposes, but unsuitable for wintering where there are neither syrup nor Clover honey. My best hive, as it has been for years, is a crossed Syrian in an octagon hive, the best form of hive for wintering, as well as for abundant storage. The bees have never been fed for nine or ten years. The Heather honey gathered in 1893 was mostly stored in five storeys of supers,

so that the three body boxes had abundance of Clover honey. The bees are already crowding the entrance, quite advanced enough for supering were we situated a little nearer the orchards on the Vale of Clyde.

During warm days I remove the under floors of my hives repeatedly, brushing all the *débris* into a pail of water. This attention destroys the parasites that annoy bees greatly, as well as the eggs of moths.

SWARMING.

Beginners are sometimes impatient when their bees are likely to swarm, and are anxious to know the signs of swarming. The circumstances which impel bees to swarm are various, such as an effete queen, irregular and ragged combs, encasements through robber bees, and the determination of youthful bees, from inexplicable causes, persisting to raise queen cells. Such bees may swarm at any moment, or what is as bad, or worse sometimes, kill their laying queen, throwing out their surplus young ones. Their chosen one remains owing to the earliness of the season, keeps a drone breeder, and the hive is ruined. Normal cases of swarming differ greatly from such abnormal ones. The experienced bee-keeper has a good knowledge when the former are likely to swarm, or, weather permitting, within a few days of it.

The symptoms are these: Internally the hive becomes crowded, the hum of the bees, particularly in the evening, is loud, increasing in some cases to an actual roar where ventilating floors are not in use. The hum is never so great where these floors are used. Queen cells will be in all stages of progress. Externally the "scouts" will be observed searching empty hives, chimney tops, crevices in trees and other places likely to accommodate them. Rallying until late in the afternoon is another indication of swarming at an early date. On the morning or early on the day of issue the bees will loiter on the landing board, and if inspected, the bees will be observed to be busy feeding, emptying rather than filling supers.

Swarming may take place at any time, whether the hive be crowded or not. The surest way to know when it is likely to occur is to examine the interior for queen cells; if present swarming is sure to be premeditated. Some writers affirm that one hive swarming causes another to swarm. This is not the case. As is stated above circumstances sometimes regulate or cause swarming to an almost incredible extent, but the law that impels the first hive to swarm is the same that causes others to swarm. One hive does not affect another in the slightest.—A LANARKSHIRE BEE-KEEPER.



All correspondence should be directed either to "THE EDITOR" or to "THE PUBLISHER." Letters addressed to Dr. Hogg or members of the staff often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post, and we do not undertake to return rejected communications.

Virgin Mushroom Spawn (M. C. B.).—Your request is distinctly an advertisement, and can only be inserted as such on the terms ascertainable from the publisher. Were we to accede to your request we should be inundated with others of a similar character on a variety of subjects.

Grafting (A. B.).—The method you describe of splitting the stock is cleft grafting; cutting a wedge out of the stock and fitting the scion in is wedge grafting; slitting the bark and inserting scions between it and the wood, then binding as you suggest, is the simplest form of crown grafting. We do not know to what particular notes you allude, as you do not quote the page in which they appear.

Unisexual Flowers and Catkins (Ignoramus).—The Birch, Willow, Hazel, Alder, Oak, Plane, Poplar, Hornbeam and Beech are all amentaceous or catkin-bearing plants. Catkins are male or female, that is, composed wholly of male or wholly of female flowers. The Elm and the Ash are not amentaceous or catkin-bearing plants, but by abortion the flowers have a unisexual character, except in the case of the Ash, when they are sometimes bisexual.

Stimulants for Plants (F. J.).—You ask for a good stimulant or "refresher" for hardy border plants and Gladioli just starting into growth. The quickest in action is nitrate of soda; but if used alone and continuously the eventual results will be the reverse of satisfactory. Mix two parts superphosphate of lime and one part nitrate of soda, and apply at the rate of 3 ozs. to the square yard. If you can obtain muriate of potash, use the same quantity as nitrate of soda, though it may not be essential, especially in strong soil.

Propagating Leucophyton Browni (G. A. K.).—This serviceable carpeting plant is most impatient of fire heat, and the cuttings are certain to fail if subjected to it. The proper time to insert the cuttings is during the month of September, and they ought to be treated exactly the same as *Violas* or *Calceolarias*. Either three parts fill frames set on a hard dry base, with nearly exhausted heating material, or set hand-lights on a bed of the same. Cover with about 3 inches of fine sandy soil, face over with sharp sand, and dibble out the cuttings thickly, keeping them rather close and shaded from bright sunshine till rooted, and in all other respects treat similarly to *Calceolarias*. They would receive the least check when bedded out if first established in thumb pots, but keep them out of the houses.

Increasing Lobelias (F. B.).—The ordinary bedding Lobelias are propagated by division and cuttings in preference to seedlings, the latter rarely being sufficiently neat growing. Bluebeard, pumila magnifica, and Brighton are all excellent blue sorts, and supposing a number of plants of either of these have been wintered in boxes in a rather low temperature, on being introduced into an early vinery or in a moist heat every shoot will quickly emit roots. These may be pulled off and dibbled in rather thickly in boxes and eventually bedded out in cold frames, or, if a little bottom heat is available, these divisions may be placed on beds of good soil and about 4 inches apart each way, where they will soon grow to a good size, the frames or lights being then available for other purposes, some other protection being provided for the Lobelias. Thousands of good plants may thus be raised without much trouble. Seedling Lobelias should be pricked out before becoming crowded and weakened. The herbaceous sorts may be divided when the suckers are well above the soil.

Winter Spinach Infested with Eelworm (G. McD.).—The plants have the appearance of a small firm-hearted Cabbage Lettuce, the stems and footstalks being much distorted, thickened and gouty, and the leafy part crumpled and compacted. It is what has received the fanciful appellation of "Cauliflower disease," which might be equally applied to all diseases caused by stem eelworm (*Tylenchus devastatrix*), as it causes distortion of the stems and petioles of the leaves, necessarily preventing free growth. The pests are for the most part in the plants, within the tissue, and to pull up and burn the infested plants would make quick work of them. Some, however, are free, that is, in the decayed parts, and are in various stages of development, and will eventually enter plants they find available for further advancement and the deposition of their eggs. It is also certain that some will be in the soil in quest of "fresh fields and pastures new." After clearing off the plants supply a good dressing of quicklime, as hot as possible, and point it in lightly.

Fertiliser for Cucumbers—Carbolic Acid and Eelworm (Reader).—Nitrate of potash is, as you say, expensive, but you cannot substitute anything for it that will afford both potash and nitrogen. The following mixture, however, may be used—bone superphosphate three parts, sulphate of potash two parts, nitrate of soda one part. The nitrate of soda should be powdered, as it readily may, by pounding on a hard floor, and the whole well mixed, applying from 2 to 4 ozs. per square yard. Kainit is a manure. It is difficult to kill the eelworm within the tissues of the roots without also destroying the plants. Carbolic acid acts by killing the micro-organisms within the soil, and should be used before the plants are put out. The acid ought to be diluted with twenty times its bulk of water, and then sprinkled on the soil through a fine-rose water pot, thoroughly mixing the soil afterwards. Two pounds of carbolic acid are sufficient for 15 cubic feet of soil, and the quantity of water 4 gallons. It should be used and mixed about a week before the plants are placed in their fruiting quarters.

Tomatoes Unsatisfactory (W. F.).—There are no traces of disease in the top of the plant sent. In all probability you have "done" your Tomatoes too well. The 4 inches of fresh soil and 4 ozs. of the proprietary manure per yard would have been ample for mixing with the top spit, and it is the quick action of the nitrogenous portion of the manure that has acted unfavourably. We have seen plants in a much worse plight than yours recover in a few weeks and produce extra heavy crops. When the soil is a little too rich, and in particular when either chemical manures or pulverised night soil have been rather freely used at the outset, the growth of plants is very sappy, and the leaves curl badly to the extent of quite giving them a diseased appearance. Not till they have grown out of this will cropping commence in good earnest. Your best plan will be to mulch with strawy litter, and thereby obviate the necessity for watering so frequently during hot dry weather. Another surfacing of manure may be given, or liquid manure applied after the plants have set a good cluster or two of fruit, always provided the young leaves have ceased to curl badly. Be not chary of using fire heat, a good circulation of air brought about with the aid of this and top ventilation acting as a good preventive of fungoid diseases. An excess of either lime or copper prejudices the mixture. Is it not as easy to use the right as the wrong proportions?

Names of Fruits.—Notice.—We have pleasure in naming good typical fruits (when the names are discoverable) for the convenience of regular subscribers, who are the growers of such fruit, and not collectors of specimens from non-subscribers. This latter procedure is wholly irregular, and we trust that none of our readers will allow themselves to be made the mediums in infringing our rules. Special attention is directed to the following decision, the object of which is to discourage the growth of inferior and promote the culture of superior varieties. *In consequence of the large number of worthless Apples and Pears sent to this office to be named, it has been decided to name only specimens and varieties of approved merit, and to reject the inferior, which are not worth sending or growing.* The names and addresses of senders of fruit to be named must in all cases be enclosed with the specimens, whether letters referring to the fruit are sent by post or not. The names are not necessarily required for publication, initials sufficing for that. Only six specimens can be named at once, and any beyond that number cannot be preserved. *They should be sent on the first indication of change towards ripening. Dessert Pears cannot be named in a hard green state.* (S. Taylor).—Cox's Orange Pippin. (H. H.).—Unrecognisable; probably a local variety.

Names of Plants.—We only undertake to name species of plants, not varieties that have originated from seed and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in firm boxes. Slightly damp moss, soft green grass or leaves form the best packing, dry wool the worst. Not more than six specimens can be named at once, and the numbers should be visible without untying the ligatures, it being often difficult to separate them when the paper is damp. (S. R. H.).—*Æschyanthus speciosus*. (J. B.).—1, *Fuchsia procumbens*; 2, *Omphalodes verna*; 3, *Celsia arcturus*; 4, An *Episcia*, a stove evergreen Gesneraceous plant, but the specific name cannot be determined without flowers; 5, *Herniaria glabra*; 6, *Sedum lydium*. (H. H.).—*Spiræa prunifolia*. (W. S.).—*Berberis Fortunei*.

COVENT GARDEN MARKET.—APRIL 11TH.

MARKET steady with short supplies at last week's quotations. Strawberries and Cucumbers, owing to the continued sunshine, reaching us in large quantities at much reduced prices.

FRUIT.

	s.	d.	s.	d.		s.	d.	s.	d.
Apples, per bushel	2	6	to 11	0	Lemons, case	10	0	to 15	0
„ Nova Scotia, per barrel	12	0	24	0	Peaches, per doz.	0	0	0	0
Cobs	45	0	50	0	Plums, per half sieve	0	0	0	0
Grapes per lb.	1	6	4	0	St. Michael Pines, each	2	0	6	0
					Strawberries per lb.	2	0	4	0

VEGETABLES.

	s.	d.	s.	d.		s.	d.	s.	d.
Asparagus, per bundle	6	0	to 7	0	Mustard and Cress, punnet	0	2	to 0	0
Beans, Kidney, per lb.	0	6	1	0	Onions, bushel	3	6	4	0
Beet, Red, dozen	1	0	0	0	Parsley, dozen bunches	2	0	3	0
Carrots, bunch	0	3	0	4	Parsnips, dozen	1	0	0	0
Caniflowers, dozen	1	6	3	0	Potatoes, per cwt.	2	0	4	0
Celery, bundle	1	0	1	3	Salsafy, bundle	1	0	1	5
Coleworts, dozen bunches	2	0	4	0	Scorzoneria, bundle	1	6	0	0
Cucumbers, dozen	1	6	3	6	Seakale, per basket	1	3	1	6
Endive, dozen	1	3	1	6	Shallots, per lb.	0	3	0	0
Herbs, bunch	0	3	0	0	Spinach, bushel	1	6	3	0
Leeks, bunch	0	2	0	0	Tomatoes, per lb.	0	6	0	9
Lettuce, dozen	0	9	1	0	Turnips, bunch	0	3	0	0
Mushrooms, punnet	0	9	1	0					

AVERAGE WHOLESALE PRICES.—OUT FLOWERS.

	s.	d.	s.	d.		s.	d.	s.	d.
Orchid Blooms in variety					Orchids, per dozen blooms	1	0	to 9	0
Arum Lilies, 12 blooms	1	6	to 3	0	Pelargoniums, 12 bunches	6	0	9	0
Azalea, dozen sprays	0	6	0	9	Pelargoniums, scarlet, doz. bunches	4	0	6	0
Bouvardias, bunch	0	6	1	0	Primula (double), dozen sprays	0	6	1	0
Camellias, dozen blooms	0	9	2	0	Primroses, doz. bunches	1	0	2	0
Carnations, 12 blooms	1	6	3	0	Pyrethrum, dozen bunches	2	0	4	0
Daffodil or Lent Lily	1	6	2	0	Roses (indoor), dozen	1	0	2	0
„ double	1	0	2	0	„ Tea, white, dozen	1	0	3	0
„ single	2	0	6	0	„ Yellow, dozen	2	0	4	0
Eucharis, dozen	2	0	4	0	Roses (French), per dozen	3	0	6	0
Gardenias, per dozen	2	0	4	0	Roses, Safrano (English), per dozen	2	0	3	0
Hyacinths, dozen spikes	0	6	0	9	Roses, Maréchal Neil, per dozen	1	6	5	0
„ Roman, per bunch	1	0	2	0	Tuberose, 12 blooms	0	6	1	0
„ Dutch, in boxes	1	3	3	6	Tulips, dozen blooms	0	6	1	0
Lilac (French) per bunch	2	6	4	0	Violets, Parme (French), per bunch	2	0	3	6
Lilies of the Valley, dozen sprays	0	6	1	0	Violets, Ozar (French), per bunch	2	0	2	6
Lilium longiflorum, per doz.	2	0	4	0	Violets (English), dozen bunches	0	9	1	0
Maidenhair Fern, dozen bunches	4	0	6	0	Wallflowers, doz. bunches	4	0	6	0
Marguerites, 12 bunches	2	0	4	0					
Mignonette, 12 bunches	3	0	6	0					
Myosotis or Forget-me-nots, dozen bunches	2	0	4	0					
Narciss, various (French), dozen bunches	2	0	4	0					

PLANTS IN POTS.

	s.	d.	s.	d.		s.	d.	s.	d.
Arbor Vitæ (golden) dozen	6	0	to 12	0	Ferns (small) per hundred	4	0	to 8	0
Arum Lilies, per dozen	6	0	12	0	Ficus elastica, each	1	0	7	6
Aspidistra, per dozen	18	0	36	0	Foliage plants, var., each	2	0	10	0
Aspidistra, specimen plant	5	0	10	6	Genista, per dozen	6	0	12	0
Azaleas, per dozen	24	0	42	0	Hyacinths, per dozen	5	0	9	0
Cineraria, per dozen	6	0	9	0	Lilium Harrisii, per dozen	18	0	30	0
Cyclamen, per dozen	9	0	12	0	Lycopodiums, per dozen	3	0	4	0
Dracæna terminalis, per dozen	18	0	42	0	Marguerite Daisy, dozen	6	0	12	0
Dracæna viridis, dozen	9	0	24	0	Mignonette, per doz.	6	0	10	0
Ericas, per dozen	9	0	24	0	Myrtles, dozen	6	0	9	0
Euonymus, var., dozen	6	0	18	0	Palms, in var., each	1	0	15	0
Evergreens, in var., dozen	6	0	24	0	„ (specimens)	21	0	63	0
Ferns, in variety, dozen	4	0	18	0	Pelargoniums, per dozen	12	0	18	0
					„ scarlet, per doz.	4	0	6	0

Roots in variety for planting out, in boxes or by the dozen.



FODDER CROPS.

"SEEDS" is a general term inclusive of the various mixtures of Grasses having coarse herbage of strong growth, and Clovers also in mixture, which are usually sown in spring corn fields after the corn plant is visible along the rows. The sowing is so managed in order that the corn may have a good start, and the seeds be kept dwarf till after harvest, a strong growth of seeds among the straw tending to retard the harvest, and causing much heating in the ricks. Sown in this way seeds afford some useful autumn grazing, but if sown alone without a corn crop the seeds would be much more useful the first season. How to sow is therefore just a matter of expediency; what to sow is apparently very much a matter of fancy as regards proportion, in the various sorts, and not an outcome of close observation. Some time ago we gave the mixture recommended by Mr. Primrose McConnell for heavy land, as an outcome of his own trials on the Essex clays. In this mixture the Fescues are not used because Tall Fescue had not answered with him, yet we always use it, and are bound to say that it thrives admirably on heavy land in the midlands, and is much more nutritious than Timothy as hay.

The use of Italian Rye Grass for layers of longer duration than two or three years would appear to be a mistake, yet it is found in all mixtures, and when 40 lbs. of seed per acre are used 4 or 5 lbs. of Italian Rye Grass adds materially to the bulk of herbage for the first year or two, and the plant of other Grasses and Clovers quickly takes its place as it disappears. The Essex mixture consists of 12 lbs. of Clover and 28 lbs. of Grass seed for a six-years layer, which may be extended to seven or eight years. For a four-years layer about 10 lbs. less seed are required, and so on downwards, reducing the quantity of seed by a few pounds for layers of shorter duration. If anything it is best to err on the side of thick seeding, only take care that the land is in good heart—i.e., well tilled and rich in fertility before sowing. Also see that fertility is so well sustained that there is no falling off in vigour of growth and bulk of the successional crops each season, and that the soil is not in an exhausted condition when the seeds in due rotation come to be ploughed in. This is simply a question of management, of linking the present with the future, of having the land always in full profit. Under judicious alternate husbandry seeds can be made to yield three or four times the quantity of fodder that is usually obtained from permanent pasture. Another advantage of breaking up the land at intervals of six or eight years is found in the possibility of effecting any requisite improvement in its condition, such as rendering it more friable, more open to the action of the air, and to the speedy passage of water through it by unchecked filtration.

In comparison with permanent pasture, the advantage is much in favour of seeds in every way. For folding, grazing, or mowing seeds are equally useful, often more so if due heed is paid in the seed mixture to the true value of the Grasses used. Where early grazing or folding is required (and where is it not?) Meadow Foxtail should be used in larger proportion than is usual because of its early growth, and while giving the leading place to Perennial Rye Grass we would always have plenty of Cocksfoot, because of its vigorous growth and for coming into use for grazing more quickly than any other Grass in the aftermaths. It answers everywhere, is much less affected by extremes of weather than many other fodder plants, and for bulk of crop it is no mean rival even of Italian Rye Grass.

Among such mixed fodder plants, as well as on permanent

pasture, early or late growth is much more frequently affected by sorts than is commonly supposed, if thought is ever given to the matter by the superficial observer. We have mentioned the high value among seeds of Meadow Foxtail for its earliness. Where it is scarce or not present, and predominance is given to Crested Dogtail, Hard Fescue, and Sheep's Fescue, growth is certain to be late and the bulk of first crop low. Rye Grass is always early, and by using nearly half of it in the mixture of Grasses free early growth is assured. Then use plenty of Cocksfoot and Tall Fescue, avoid doubtful sorts, apply manure with a free hand, and remember that to have successional growths of equal vigour in the same season something more than a February dressing of manure is wanted.

WORK ON THE HOME FARM.

Spring work of much importance is now in hand, and upon the doing it well with care and discretion our successful management of live stock next autumn, winter—aye, and in the following spring, too—very much depends. So far, corn drilling, and the sowing of Italian Rye Grass, seeds, Tares, Lucerne and Sainfoin has gone well. Seed beds for every crop have been excellent—for Barley, exceptionally so. Now we have the drilling of Thousand-headed Kale, Early and Giant Drumhead Cabbages. The Early Drumhead should be ready in September to make quite sure of an early supply of Cabbage; then it is also worth while drilling some of Sutton's Early Sheepfold, which the Early Drumhead is certain to follow closely; then should come Thousand-headed Kale, which, with Giant Drumhead, carries on the supply into the following January. Such a supply of sound nutritious green food in autumn and winter is invaluable. The early Cabbage are well ready before the supply of green Maize is exhausted, and the Kale is so hardy that it may be depended upon even longer than the time mentioned.

By drilling early in rich friable soil, these crops are well established and growing freely by the end of the month. Sow thinly, single, and do any necessary transplanting early, then keep the horse hoe going freely between the rows. Drill Early Sheepfold Cabbage 20 inches apart, single to 20 inches, Early Drumhead 28 inches each way, Thousand-headed Kale the same, Giant Drumhead 3 feet each way. These distances point to full development, to ensure which the soil must be rich. Apply per acre 3 cwt. muriate of potash, 3 cwt. superphosphate of lime, 1½ cwt. nitrate of soda. Mix and sow broadcast, give a turn or two with light harrows, and follow at once with the seed drill. Take especial care that the manure is used and the seed sown on the same day, or only apply manure to as much land as can be drilled daily. Get this work out of hand now without delay, as the root crops are pressing for attention, and it is always best to be a little beforehand with spring work. Early growth, roots well hold of the soil, plants singled as soon as they can be handled, weeds kept well under, are the essentials, all very simple, but all important.

OUR LETTER BOX.

Lame Horse (C. H.).—Rest, Elliman's embrocation well rubbed in night and morning, and cold bandages should set matters right. Some green food, Carrots or Mangolds, with a bran mash at night rather frequently would do good. Age tells in this as in other ailments, a young horse recovering from such a sprain much sooner than an old one. Is the horse properly shod? If there is a doubt about this see to it at once, have the shoe taken off, and keep it off for a week or so.

METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude, 111 feet

DATE.		9 A.M.					IN THE DAY.				Rain.
1894.	April.	Barometer at 32° and Sea Level.	Hygrometer.		Direc- tion of Wind.	Temp. of soil at 1 foot.	Shade Tem- perature.		Radiation Temperature		
			Dry.	Wet.			Max.	Min.	In Sun.	On Grass.	
		Inchs.	deg.	deg.		deg.	deg.	deg.	deg.	Inchs.	
Sunday ..	1	30.049	53.4	48.4	Calm.	45.6	63.0	41.3	84.2	33.0	—
Monday ..	2	29.917	52.3	48.1	N.E.	45.6	63.7	39.3	96.7	30.2	0.240
Tuesday ..	3	29.875	51.1	46.4	E.	45.1	62.9	37.5	88.9	30.5	—
Wednesday ..	4	30.099	43.3	42.1	E.	45.1	62.0	40.1	97.7	33.8	—
Thursday ..	5	30.184	48.8	46.6	E.	45.5	62.7	36.9	101.9	31.9	—
Friday ..	6	30.019	49.1	45.6	E.	46.6	56.9	44.6	87.8	42.3	—
Saturday ..	7	30.007	49.4	46.9	E.	46.4	68.1	40.0	103.7	36.1	—
		30.026	49.5	46.5		45.7	62.8	40.0	94.4	34.0	0.240

REMARKS.

- 1st.—Very hazy and sultry throughout, with the appearance of an impending thunder-storm. Spots of rain at times, but not enough to measure.
 - 2nd.—Generally sunny till noon. Rain, with thunder, from 1 A.M. to 2 P.M., and heavy rain with lightning and thunder from 2.20 to 2.30 P.M.; bright sun again after 3 P.M.
 - 3rd.—Fine and generally sunny, but overcast for a time about noon.
 - 4th.—Overcast early; sunshine from 10.30 A.M.
 - 5th.—Bright sunshine throughout with slight breeze.
 - 6th.—Overcast morning, with slight rain early; occasional sunshine in afternoon.
 - 7th.—Overcast till about 11 A.M., then sunny and warm.
- Another sunny and warm week, with measureable rain on only one day. Temperature nearly 6° above the average.—G. J. SYMONS.



AS I walk round the garden of hardy flowers in April I feel that the pen of the poet, and not that of the writer of laboured prose, would be needed to treat fitly of these fresh, fair flowers, which in the border or on the rockery smile bewitchingly upon me. They seem to know that their owner is not insensible to their beauty, and that they are looked upon, not with indifference, but with the keenest appreciation and admiration. Before proceeding to speak of a few flowers in detail I may briefly glance at some of the leading features of the garden at present.

The Daffodil in its many forms sways gently with the softer breezes, or tosses wildly as the east wind sweeps over the sands or waves of the Solway and invades the garden with its unwelcome breath. Sheets of snowy Arabis on the rockeries or edges of the borders contrast admirably with mounds of purple or rose coloured Aubrietias. Anemones of many kinds are full of beauty in the borders or in the rock garden, giving flowers of blue or purple, white or blush, or crimson of various tints, such as that displayed by a good form of *A. fulgens*, which, as I write, shines behind and above a clump of the Spanish Squill on a rockery opposite the window of my room. Saxifrages with white flowers, such as those of the charming little *S. coriophylla*, or yellow ones, as are displayed by *S. Boydi*, adorn the rockery, while moist and shady nooks occupied by such moisture-loving plants as Trilliums and some of the hardy Orchids are bright with the glossy leaves and golden flowers of *S. Huetti*; and Grape Hyacinths, pale blue, deep blue, black blue, white and tinted faintly with pale pink, mingle in harmony with the early Forget-me-not, *Myosotis dissitiflora*. The modest Cardamine trifoliata has just preceded the gayer Ladies' Smock, as represented by its double form, *Cardamine pratensis flore-pleno*. Some Dog's Tooth Violets in various colours and shades are still in bloom, while others have passed away for their long rest. Very delightful have they been with their spotted or marbled leaves and pretty flowers, purple, pink, white, and yellow.

Fritillarias, too, from the somewhat ungainly if stately Crown Imperials to those of the habit of *F. meleagris*, the Snake's Head Lily, adorn the garden. It is not everyone who can admire these fantastic looking flowers, but one can hardly deny that some of the white forms of the common *F. meleagris* are very beautiful. Here in the border the starry white blooms of *Triteleia uniflora* harmonise well with the soft blue flowers of the Italian Squill, *Scilla italica*, the pleasing porcelain stripe on the *Triteleia* making the effect more beautiful. In many places Primroses and Polyanthus in numerous colours and shades are pictures of beauty, a few of the *Primula* species giving the charm of greater variety. Some of the earlier Tulips have come into flower, two varieties of *T. Greigi* in particular being rivals of the Daffodils in claiming the honour of being the glory of the garden. Many others there are of showy or of modest beauty, and over all in calm days is cast the fragrance of the odorous Wallflower. Nor is the added charm of insect life absent, for tortoiseshell butterflies flit about from flower to flower; honey bees throng the garden, and the long hum of the humble bee sounds cheerily at times in my ears as I linger over the garden treasures.

Gloriously beautiful are the following varieties of *Tulipa Greigi* at present in flower in my garden, *T. G. aurea zonata* and *T. G. æstivans*. Gorgeous they may be but it is without gaudiness, and as they open to the April sun their effect is apparent to all. The first of these is bright gold with a large deep red blotch at the base of the outside petals, a smaller one on the outside of the inner ones, and the inside of the flower shows a golden cup with a bright red zone at the base. The second is nearly all bright red with here and there a flush of gold. To all this are added the large size of the flower, and the beauty of the broad, green leaves, spotted with brown. This Tulip seems, unfortunately, to be slow of increase, and in some gardens difficult to grow. I have grown the typical *T. Greigi* and some varieties for several years, and find they do best in a bed of sandy peat with stiff road parings, and in a position fully exposed to the sun in the spring, but partially shaded in summer by an adjoining bed of some of the taller herbaceous plants.

Exceedingly useful in the spring garden are some of the earlier *Doronicums* or Leopard's Banes, which with their starry petalled golden flowers brighten the borders. Not so tall and fine as *D. Harpur Crewe* but earlier, and thus, in some respects, more valuable, is *D. caucasicum* growing in light soil to about a foot in height and literally covered with flowers fully 1½ inch across with narrow petals. The radical leaves are reniform and deeply toothed, while those of the stem are oval and clasping. It is easily grown in almost any soil. Rather taller with me, but quite as free flowering, is *D. austriacum*, with more heart-shaped radical leaves which are less toothed than those of *D. caucasicum*. *D. Columnæ*, said to grow only about 6 inches in height, has not retained its dwarfness when established, and is less free flowering in this garden than the two preceding. One I received from Bithynia as *D. macrorhizon* is of still less value. *D. Harpur Crewe* is extremely fine, but in strong soils is a little coarse from its vigorous habit.

Very pretty are some of the *Dentarias* or Toothworts, which are hardly sufficiently known in gardens, although their preference for a half-shady spot will give them additional value to many persons. My first acquaintance with these was made several years ago in the Edinburgh Botanic Garden, so well known for its rich collection of hardy flowers. One of the neatest is *D. pinnata*, of which I have only the white form, although there are also purple and lilac varieties. In some soils it grows to 18 inches in height, but in my garden barely attains a foot high. The flowers are borne in a terminal cluster, and the pinnate leaves are composed of from five to seven leaflets. It is said to be a native of the mountain woods of Switzerland.

The Drabas are interesting little plants to the lover of Alpine flowers, and it is unfortunate that their nomenclature is somewhat obscure. I have some six or eight species, and one of the most pleasing of the yellow ones is *D. cuspidata*, the pointed-leaved Draba, which only grows some 3 or 4 inches in height, and forms pretty little rosettes of pointed ciliated leaves with thick stems, bearing small yellow flowers in terminal racemes. It is a native of the mountains of Spain, and is grown here in light sandy soil on a rockery facing west. So far as I am aware I have only previously mentioned in the briefest possible way the little golden Saxifrage alluded to above as *S. Huetti*. I believe this is the true name of the one I procured as *S. cymbalaria*; but there is so little difference between the two, this apparently consisting only in a slightly different form of leaf, that those seeking this plant may ask for it under either name. The leaves are thick and glossy green, kidney-shaped, with small lobes, and the small flowers, which are produced from early spring to late autumn, are bright yellow. Although in ordinary seasons the flowers are not produced in midwinter, in a season like the past winter they have never been absent from my garden. It is a charming little plant for carpeting the surface of ground occupied by other plants, especially those

in light soil in moist and shady positions. If it has a fault—it is that in some soils it seeds so freely that this Saxifrage becomes plentiful all over the garden. This is so here, but one had better weed out a plant like this when too numerous than be without so charming an occupant. In this garden it grows in either sun or shade, dry or wet positions, the only difference being that in shade and damp it is more vigorous. *S. Huetti* or *cymbalaria* is only a biennial, but in many gardens sows itself so freely as to be equal to any perennial.

Morisia hypogæa I have previously spoken of, but as it is still rare even in good collections of alpine, a word or two on its behaviour in the open during the past winter may not be unwelcome. I grow it on a rather dry terrace of a rockery facing almost due south, and planted in sandy peat with an abundance of small grit intermixed. Here it stood last winter without protection and without receiving the slightest injury. I believe it flowers earlier in the south, but it did not open here until early in March. Its compact habit and glossy dark green leaves, and bright little yellow flowers, make it extremely attractive to those who admire the modest beauty of the smaller alpine flowers.

The *Ornithogalums* are best known in gardens by the familiar *O. umbellatum*, the Star of Bethlehem, which unfortunately becomes only too familiar by its enormous increase in some soils. It is a pity, however, that some of the other species are not grown, the flowers of several being very pretty. A neat little one, which I received about two years ago as *O. ciliatum*, has been very pretty since early in February. It has ciliated leaves and small pure white flowers, only about 2 inches high in my garden. It seems to be perfectly hardy and easily grown, and has been considerably admired.

These few flowers culled from the bountiful supply offered us by "fair-handed spring" are not spoken of as the best in bloom, but as giving some idea of the variety offered by a well-stocked garden of hardy flowers. Year by year such a garden grows in interest as plants increase in size and number, and yearly the love for its occupants waxes greater and more ennobling.—S. ARNOTT, *Dumfries*.

THE ONION MAGGOT.

So far the contributions respecting the treatment of that great pest, the Onion maggot, are good, because they all indicate successful methods. Against them we have to set statements by others, that they have tried all these agencies referred to by correspondents, but without success. These complaints crop up freely in various directions. So far as relates to soot dressings for instance, I have been frequently told that they have been found useless. No doubt these diverse results come from local conditions. A gardener whose ground is much isolated from other gardens enjoys some advantages not found in the case of gardens that are numerous in the same locality, or, like groups of allotments, have even greater numbers of gardens in immediate contiguity.

When such is the case the fly, the original criminal, can wander hither and thither over Onion breadths, let the grower have taken what necessary precaution he may, and unless his Onions have been in some way rendered so obnoxious to the fly the insect will settle on them. All other remedies may fail, still the pest must be battled with so far as is possible, and if it could be that the maggot can be destroyed when just germinated, we should hope in that way to finally extirpate it entirely. I believe that a dressing of Bordeaux mixture given to the Onion plants when some 4 or 5 inches in height would not only poison the maggot so soon as it began to feed, but also would be helpful in checking the Onion mould, which is in many places very destructive. Of course it would have to be made rather weak, and it may be well also to make it adhesive to add to the mixture some molasses. This is one remedy, which, so far, does not seem to have been tested. Of course those who have found soot and gas lime sufficient may ask what can be better; but we have to offer some more effective remedy to those who have not found these things sufficient.

I am very interested to find that gas lime has proved to be of so satisfactory a nature, because in recommending this very drastic material as dressing for other crops, especially in relation to club, slime fungus, wireworm, and grub, I have been met with the objection that it killed all vegetation. It is hard to make persons

understand, who have met with such results, that their ill fortune has been entirely due to their own neglect to properly aerate and purify the gas lime by long exposure on the soil before burying it. Also they have very probably been far too lavish in the use of the material. Every instance, therefore, recorded of its successful employment for garden crops is helpful. Of course, potent as may be its effects on the portion of ground which is dressed, it cannot affect other ground where Onions may have been grown the preceding year, and where the crop was perhaps badly infested with maggot. If it did there could be no fly to infest the young Onion plants, because the grub in its resting condition would all have been destroyed if that be possible.

I am not sure whether, after all, deep trenching, the burying down under perhaps 18 inches of soil of that portion in which the grub is hybernating, may not prove one of the most efficacious methods of dealing with the pest. Certainly the maggot is always most in evidence on light loose soils and that are shallow worked.

Then there is the transplanting remedy, which, again, is a good one, and may be adopted almost generally, except in the case of extensive areas. Then beyond the deepest possible of cultivation, the application of Bordeaux mixture, of soot, gas lime, or artificial manures, and very early sowing, little more can be done. Still, to be able to do so much is a good deal. Where, however, the Onion breadth ranges from 1 to 20 rods, it is not a matter of difficulty to raise plants in houses or frames, sown in shallow boxes, to plant them out into well prepared ground after they have been hardened and are strong, for if at the moment some time be reluctantly occupied in the transplanting, some has been saved in the usual labour of drawing drills, sowing seeds, filling in soil, and later, thinning the young plants, so that on the whole it is doubtful whether more labour in the one case really is required than in the other. Bad must indeed be the work if through transplanting any of the young plants die. Onions, if properly grown, send out long roots, and if these be allowed in the dibbling to go down their full depth, and be properly closed with soil, they very soon get hold of the ground, and new growth rapidly ensues.

After cultivation is very simple, and if as a result, and ample experience has proved it to be so, the crop is unharmed by the maggot, how much is any extra labour compensated? Whilst such a method of cheating the maggot is pretty certain to result in the production of a fine even sample of bulbs, yet because not unduly forced on soil that is almost one-half manure, they are not like to certain show Onions, soft and fugitive, but they are hard and enduring. Beyond what remedies have been so admirably mentioned by correspondents, it will be good news to learn that there may yet be others that are not generally known.—A. D.

THE discussion respecting the dreaded maggot has been very interesting, and praise is due to all those who have given the various remedies contained in it. Like many others, I have been troubled for several years past with the maggot, and at one time had serious thoughts of giving up the culture of the Onion, for after trying many so-called cures (and each failed in its turn) I became disheartened at the possibility of ever growing any good bulbs again.

Some two years since a well-known gardener paid me a visit, and when walking through the kitchen garden remarked that I was suffering from the Onion maggot, and inquired what specific had been tried. I replied everything I could think of, and what I had been advised to try. "Well," he remarked, "try one more, and see if you will succeed this time." Being a very simple remedy, I did so, as follows. When the young plants were well up I dusted them with fine powdered "gas lime" every ten days, using but a slight sprinkling each time. I followed this plan and succeeded, for although last year was one of the worst I ever knew for the maggot, I kept the pest away, and procured a heavy crop of fine bulbs, which I had not done for several years.

By way of experiment I retained a few rows untouched by the lime, and these were perfectly destroyed, not a single plant being left. To my mind this proved conclusively that gas lime is effectual, and I shall follow the plan again this year, commencing in a few days. As stated above, however, the lime must be used with care, a slight sprinkling at each application, or serious consequences may arise.—T. A.

IN preventing the attack of the Onion maggot I have found the following to be in a great measure successful, having used it now for six years, and during that time not failed in securing a good crop of Onions. I mix 14 lbs. nitrate of soda, 14 lbs. guano, and 1 peck of soot with a wheelbarrowload of dry wood ash. About the time of the fly appearing a careful man thoroughly dusts the mixture on the Onions early in the morning while the dew is on them. I have the crop dusted twice with an interval of a few days, depending on the weather.—F. A. B.



CYPRIPEDIUM WINIFRED HOLLINGTON.

ONE of the most attractive hybrid *Cypripediums* in cultivation was exhibited under the above designation by A. J. Hollington, Esq., Forty Hill, Enfield, at the Drill Hall, Westminster, on the 13th inst. This is said to be the result of a cross between *C. ciliolare* and *C. niveum*, and the Orchid Committee of the Royal Horticultural Society justly considered it worthy of a first-class certificate. The sepals and petals are pale pink veined with crimson, both front and back having a hirsute surface. The lip is rosy purple, passing to nearly white at the base. Fig. 48 represents a bloom of this beautiful *Cypripedium*.

ORCHIDS AT WESTMINSTER.

NOTWITHSTANDING the innumerable hardy flowers that were staged at the meeting of the Royal Horticultural Society held on the 10th inst. at the Drill Hall, Westminster, the Orchids made a grand display, and attracted the notice of visitors. The plants were, however, scattered in various parts of the building, which to some extent detracted from the effect. It would be advantageous, as an orchidist present remarked, were the authorities enabled to depart from this rule and place the Orchids together, thereby enhancing the appearance of the collections, as well as assisting visitors to view the plants without any trouble. Moreover, it sometimes happens that an exceedingly choice species or variety is situated amongst other less important plants, and by this means is entirely missed by Orchid enthusiasts. These are matters which should be seen to at once. The rule adopted at the Temple Gardens Show—that of placing the Orchids together as much as possible—is an excellent one, and might be carried out at the Drill Hall.

On the occasion mentioned there were many choice Orchids shown by various well-known growers, one of the most important being perhaps *Eulophiella Elizabethæ*. Some months since sensational paragraphs concerning the finding of this Orchid went the round of the general press, and these undoubtedly left an impression upon the minds of many persons that it was a species of extraordinary merit. It was not therefore a matter of surprise to see how the visitors at the Drill Hall were attracted by this *Eulophiella*, although an illustration of it appeared in the *Journal of Horticulture* as long ago as September 22nd, 1892. In that number it was mentioned, as previously described in the May number of "*Lindenia*," as having "the habit of a *Catasetum*," producing "a long horizontal stem, furnished with a score or so of the most beautiful flowers. The sepals and petals, which are stout in substance and distinctly rounded, are white tinted with rose; the broad three-lobed lip is of the same shape, and bears at its base a bright orange callus; the back of the segment is coloured with a beautiful reddish stem, as well as the floral stem itself." This description was borne out in the plant exhibited on the 10th inst. by Sir Trevor Lawrence, Bart. The specimen alluded to, and for which a first-class certificate was awarded, had two pseudo-bulbs with two flower spikes, the latter being about a foot each in length. It is said to have been the first of its kind ever exhibited in England.

Another beautiful Orchid staged by Sir Trevor Lawrence was *Dendrobium Falconeri giganteum*. This is distinct from the type, which has been cultivated in British gardens since 1856, in both habit and flowers. Judging by the plant exhibited, and for which a first-class certificate was awarded, it would appear to be more profuse in flowering than the species usually is, though the skilful

management accorded the plant may in some measure account for this. At any rate the specimen under notice was well flowered. The pseudo-bulbs seemed longer than are those of *D. Falconeri*, and the blooms were decidedly larger, particularly the sepals and petals. This *Dendrobium* is unquestionably a charming Orchid, and one no doubt highly valued by the owner.

The meetings of the Royal Horticultural Society have frequently been enriched with the floral treasures of Baron Schröder, and the last gathering was no exception to the now general rule. If one may be allowed to surmise by the magnificent spikes recently exhibited by Mr. Ballantine, the Orchid houses at The Dell, Egham, must be exceptionally well stocked with *Odontoglossums*. These, too, are cleverly managed, for at the Drill Hall, on the 10th inst., splendid examples of cultural skill were conspicuous in the form of a display of cut *Odontoglossums*. Amongst these were some charming types. A huge spike of *O. Leeatum* with a large number of flowers attracted considerable



FIG. 48.—CYPRIPEDIUM WINIFRED HOLLINGTON.

attention, and was much admired. The flowers were pale yellow, spotted chocolate brown, and very fragrant. A grand spike of *O. triumphans* bore eleven very large flowers, and the choice *O. elegans* was well represented, the same also applying to *O. luteo-purpureum sceptrum*, a spike of which carried no less than nineteen well developed blooms.

Dendrobiums are generally shown in splendid condition at certain periods of the year, and on this occasion one could scarcely help observing the Tring Park variety of *D. crepidatum*. In this Mr. E. Hill, gardener to Lord Rothschild, has obviously a very fine form. The flowers are nearly double the size of those usually borne by the type, and present an excellent appearance. An expert informed me that "it was the largest form he had ever seen, and one of the best *Dendrobiums* exhibited for some time past at the Drill Hall." The fact of a first-class certificate being awarded may perhaps be taken as corroborative evidence of the foregoing statement. The plant exhibited, however, was only a small one, but, as already mentioned, it did not escape notice. The sepals and petals were blush coloured margined with rosy mauve, while the lip approached a purplish hue, the centre being rich orange yellow.

Another *Dendrobium* around which quite a small crowd of enthusiasts collected was that of *D. × Alcippe*, exhibited by Messrs. J. Veitch & Sons. This is a new hybrid and worthy of the great Chelsea firm, also of the award of merit that was adjudged for it on this occasion. It is the result of a cross between

D. lituiflorum Freemanni and *D. Wardianum*, the first named apparently being the pollen parent. The sepals and petals are pale, suffused with rosy purple. The lip was noted as being rather large, and had a richly coloured maroon spot on the inner portion.

Besides the foregoing there were many other choice Orchids shown at this meeting, a gem being *Cypripedium* Winifred Hollington. This is a splendid hybrid, and beyond saying that, no further reference is needed here, inasmuch as a description, with an illustration, is published elsewhere in this issue. Messrs. Hugh Low & Co. exhibited a plant of *Aërides* Hughii, named after the late Mr. Hugh Low, for which an award of merit was accorded. This *Aërides* is distinct in habit, but the flowers appeared to resemble those of *A. maculosum*. Amongst others *Lycaste cruenta* gigantea sent by A. H. Smee, Esq., and the somewhat rare *Cypripedium* Mastersianum shown by R. J. Measures, Esq., were conspicuous, these being honoured with awards of merit.—SPECIALIST.

DENDROBIUM SUPERBUM.

AMONGST the various *Dendrobiums* at present in flower the above variety, introduced from the Philippine Islands many years ago, but now too seldom met with, figures conspicuously. Although not so showy as *D. Wardianum* and many other of the lighter varieties, it is very effective when well grown, its fine large flowers, 4 inches across, being pink tipped with rose, and the lip of a deep rich purple. A peculiarity is the strong fragrance of the flowers, reminding one of the odour of Turkey Rhubarb, but this forms no objection when the plants are grown in baskets, a position in which they delight. Crocks, charcoal, peat, and a surfacing of clean sphagnum moss formed the compost in which I used to grow this *Dendrobium*. The plants had plenty of heat and were well syringed twice daily when in active growth, reducing water gradually as the pseudo-bulbs approached the ripening stage, only giving sufficient to prevent them shrivelling. At that period some growers remove their plants to a cooler house until the flowers can be detected on each side of the pseudo-bulbs, but perhaps the safest course to follow is to keep the plants well up to the glass, so that they may get all sunshine possible throughout the winter months, and then success is certain.—R. P. R.

ONCIDIUM SPLENDIDUM.

THIS fine Orchid is worthy of its name, and is perhaps the best of the *Oncidiums* now blooming. The many-flowered, erect, branching spike resembles that of *O. tigrinum*, but the habit of the plant is quite dissimilar. It has nearly round, green, pseudo-bulbs, each bearing a single very thick leaf of the same colour as the bulbs, but becoming bronzed with age. It should be grown in the Cattleya house in a light sunny position, and like many of the *Oncidiums* from the western tropics it seems to enjoy a hot dry atmosphere at midday with copious supplies of water at the roots while growing.

SCUTICARIA STEELI.

This species is generally known as the Whip Orchid, and is interesting on account of the peculiar terete leaves, which on plants in good condition frequently attain a length of from 4 to 4½ feet. The best growths I have seen were on blocks hanging on the end wall of a *Dendrobium* house immediately over a water tank. The flowers, which are not usually very frequently produced, are generally in pairs, each bloom being from 3 to 4 inches across, creamy white, with large brown spots on the sepals and petals, the lip handsomely striped with purple.

STANHOPEAS.

These plants may be much better grown than they are in many places if a little of the careful treatment that is bestowed on more popular genera was accorded them, and no one who has seen well flowered specimens of *S. eburnea* or *S. tigrina* will deny that they are worthy of a little care. The flowers, though evanescent, are nevertheless very beautiful and fragrant, while their grotesque forms and beautiful texture never fail to excite admiration. Stanhopeas will not flower if frequently disturbed at the roots, but every year they should have a little of the surface compost removed and replaced with fresh sphagnum and charcoal, the early spring months being the best time to do this.

Any plants that are unhealthy should be shaken out of the compost, well washed in tepid water, and all decayed roots cut away. They may then be replaced in either teak or copper wire baskets, using for compost fresh sphagnum, plenty of charcoal, and a little good lcam fibre. Large pieces of charcoal should be laid in the bottom of the basket, and placed as far apart as possible to allow the flower spikes to descend, then a layer of moss over these and around the sides of the baskets. The plants must be firmly set in position, as the young roots when formed are very brittle.

If the old roots are plentiful this is easily managed, but if not they must be tied securely to the sides until re-established.

All the kinds mentioned below will flourish if kept well up to the glass in a warm house in the summer, and they should be liberally watered both at the roots and on the foliage while growing. In the winter they may be removed to cooler and drier quarters. This will rest the plants, and also tend to keep insect in check. The species most generally grown are *S. eburnea*, *S. Bucephalus*, *S. insignis*, *S. oculata*, *S. tigrina*, and *S. Wardi*. All these, with the exception of the first named, have flowers of various shades of yellow more or less spotted and blotched with purple or crimson, while the flowers of *S. eburnea* are wholly of pure white.—H. R. R.

ORNAMENTAL GARDENING.

WITH the advance of civilisation and the rapid spread of artistic tastes among various classes of the community, changes in the general aspect of gardening must inevitably be taking place. With a widespread knowledge of the art of culture, production becomes more easy, and requirements are perhaps still more fully developed. The direction in which these requirements proceed seem, however, to take distinct and sometimes opposite courses in the various stages of horticultural history.

With the rapid cheapening of glass and extended knowledge of horticultural building, plant and fruit culture under glass in private establishments advanced by leaps and bounds, with the result that plants and cut flowers are gradually introduced in largely increased numbers into dwelling rooms. The expense attending this phase of gardening in times of depression was soon acutely felt, and in order to keep up the requisite display on more economic terms herbaceous plants and hardy trees and shrubs were largely employed, the surplus fruit and vegetables being disposed of in the open market. Although this course entailed an immense amount of extra work upon the gardeners in charge of places conducted on these lines, many a man has been contented to plod on in this way rather than see the grand and historical homes of England—in which some gardeners have taken as keen an interest in beautifying as their noble owners—subjected to a system of dismemberment altogether incompatible with the history of their past greatness and continued prestige. In those instances in which gardens have been conducted on these lines during the last few years, it may be safely asserted that employers have derived a greater amount of pleasure and produce for a minimum outlay than they could possibly have obtained by any other means, while at the same time the enjoyment of the whole extent of their gardens has been preserved to them. Perhaps the only persons who have had cause to complain at the arrangement are the numerous small market growers, whose produce has deteriorated in value by having the markets glutted with the surplus from private gardens. Still it is difficult to devise a plan more fair and satisfactory to all parties concerned.

Managed in this way many extensive establishments are well maintained at far less cost than was formerly the case. This is the more astonishing when we consider how greatly the work has increased in the ornamental department of gardening. Those who are not thoroughly conversant with the work have but a shadowy idea of the time taken up in attending to indoor decorations. With numerous cut flowers, and many plants in the various rooms of our mansions or castles, the daily attention of gathering and arranging flowers, preparing, changing, and clearing plants is no light task whenever the work is well done, as it must be to give either gardener or employer satisfaction.

The demands in connection with dinner-table decorations are also becoming much more general, and although it is a pleasure to carry out this kind of work under some conditions, still it must be set down as an unproductive branch of gardening which, in consequence of the necessary time bestowed upon it, frequently prevents a man displaying his cultural abilities, and leaves him nothing to show for the skill and ingenuity expended upon it, except the cherished remembrance of the satisfaction given and compliments received on the occasion.

Happily there are still many gardening establishments which are conducted on liberal lines, where great impetus is given to cultural excellence, so that one department is not allowed to suffer at the expense of the other, where the beauties of good cultural examples of plants and flowers are displayed principally in the conservatory or the gardens, rather than ruined by lengthy sojourn in dwelling rooms. Were this course more generally adopted, many a struggling gardener would always have some creditable example of plant and flower culture to gladden the eyes of his employers, leave upon their minds a lasting impression of his ability, and at the same time secure high keeping throughout at a moderate expenditure.

It is the great demand for cut flowers and plants for indoor

embellishment that has added so largely to the expenses of gardens during recent years. It would be no great hardship to somewhat curtail the use of these when there is so much that is beautiful and refreshing without. Few owners of gardens have thought the matter over in this way, but have only followed the dictates of fashion—that goddess which leads us often into winding paths. If perchance these lines should be read by some thoughtful and generous employers, who through the exigencies of present times are compelled to study some means of keeping the expenditure of their gardens at a still lower point, let them consider well the facts stated, and I think they will then see where the shoe of many a struggling gardener “pinches the most,” and where, in their own interests, they may perhaps lighten it.—BLAIT BOWKAIL.

SETTING MUSCAT GRAPES.

IN no other Grape so largely grown is a bad “set” so noticeable as in the Alexandrian Muscat. Badly set bunches, where the conveniences are available for providing a sufficient amount of heat, show a want of cultural skill. Not only are imperfectly fertilised bunches objectionable to the eye, but represent a distinct loss of crops, and from an exhibitor’s point of view are totally useless. Now that Muscat of Alexandria Vines are passing through the flowering stage, a note on setting the fruit may be of service to some readers.

Although many fine bunches of Muscat of Alexandria are produced in “mixed” vineries, the best crops are found in houses solely devoted to this fine Grape. There are instances of perfectly “set” bunches having been obtained in low temperatures; but in my opinion the high temperature system has been the most satisfactory. In the first place, the Vines must be in the best of health, then with a perfect command of heat there is no reason why there should be any failure in the crop.

From the time the bunches are drawing out until the first flowers expand I maintain a night temperature of about 70°, raising it to 75° if possible when the Vines are in full bloom. I admit air through the top ventilators when the thermometer rises to 75°, to dissipate some of the moisture in the house before the heat becomes too great. The sun shining on the house, when there is much moisture in the atmosphere, is liable to result in scorching, the foliage of this Muscat being more tender than any other Grape in cultivation. The temperature during the day may rise to 90° with air, gradually reducing the ventilation as the heat declines, until the house is closed at 83°.

I never admit air to any vinery through the front ventilators until the berries are taking their second swelling after the stoning process. The vineries are not so well protected from easterly winds as I should like, and admitting air through the front ventilators invites mildew. Vineries differently situated may be managed on more simple lines perhaps, but in the case of this Muscat I cannot recommend front air while the Vines are in flower. I have seen it tried and failed, and from such experience we may take lessons. In dull weather, when no aid is obtained from the sun, fire heat is employed to make up the loss to 80° for a few days until fertilisation is thoroughly effected. The temperature is then gradually lowered to 70° by night, with a corresponding decline by day, as a continuation of the greater heat has a tendency to weaken the Vines in their growth and favour red spider. The air is kept rather dry, and it suffices to moisten the surface of the border, walls and paths once a day during bright weather to prevent an attack of the enemy. The evaporating troughs are not filled with water while the Vines are in flower. Care is exercised when moistening the border that the water does not fall on the heated pipes, especially if the bunches hang near to them, as the steam arising often rusts the tender skin of the berries. Rust is a defect in culture. It not only spoils the appearance of the berries but prevents their swelling, and leads to the rupture of the skin.

When the Vines are in bloom each bunch is sharply tapped daily to disperse the pollen, this greatly assisting fertilisation. About midday is the best time for doing this, as the pollen is then dry. Each bunch is also passed over daily with a hare or rabbit’s tail fastened to a stick, gently drawing it over the fully expanded flowers. Where several vineries are built in one range it is a mistake to allow the doors to remain open for any length of time while the Vines are in flower to cause a draught. What is required in setting Muscats is an equable temperature—a minimum of fluctuations.—E. MOLYNEUX.

THE BLACK CURRANT MITE.

It would be very interesting, and useful also, if we could get information from various parts of the country as to the state of Currant bushes this spring; whether the attack of this pest is becoming more general, and what means are being employed to

eradicate it. I am under the impression it is more prevalent than we anticipate, for it is no uncommon thing to ask a person whether his bushes are attacked to be told they do not know. On examining the trees after receiving such an answer it has been found in no mistakeable manner. I think I am correct in saying Kent is suffering most from its ravages at the present time, doubtless owing to the enormous quantity of Currants grown in that county. In Essex, too, it appears to be widespread, for I have found numerous cases.

I am afraid the pest is not of such modern origin as many people suppose, for one large grower in Mid-Kent told me he had known it for ten years, but that it had caused little damage until within the last four or five years. I am also acquainted with a case in Essex where it has just been discovered on many bushes. In this particular case it is very evident it has not been imported recently, for no fresh bushes have been introduced to the garden for more than ten years. Where has it come from? I should like to ask the readers of the Journal if they notice its attacks to be more prevalent on one variety than another, for the evidence I get is somewhat conflicting. One large grower informs me the Black Naples is most susceptible to its ravages, and I have found a similar case myself. On looking through a farm plantation I found the Baldwin quite clean, while the few trees of Naples present were attacked. The variety attacked in the Essex garden is Black Champion, the other kinds appearing free from its ravages. Its attack is not general throughout the county of Kent, for I have been in several places where the bushes are quite clear and its ravages unknown. I have been examining a few buds recently under the microscope, and found mites and eggs, probably more than a hundred in each bud, for I counted as many as fifteen in the smallest section I could cut with a razor.

Have any readers tried the remedies advanced by the Board of Agriculture—viz., to syringe the trees well with a solution of 1 oz. of Paris green in 11 to 12 gallons of water, with 2 ozs. of softsoap to make the mixture adhere, or an emulsion of 6 lbs. softsoap, 3 quarts of carbolic acid to 100 gallons of water, the bushes to be syringed in the early spring, and again in the autumn after the leaves have fallen? Any information based on such experience would be most valuable, for many practical growers at the present time are under the impression the only effectual remedy is to take out the bushes, and wait a few years before planting again.

Many of the Kentish growers employed women to pick off the swollen buds, but it was found to be of little use. Others tried cutting the trees down, expecting the young growth to be quite free, but the buds were soon attacked again, and at the present time the Black Currant mite appears master of the situation. It certainly behoves all growers to be careful when they obtain fresh stock, for if the garden is clear at the present time every effort must be made to keep it so. The young plants should be carefully watched, and if a swollen bud is found it should be burned and the trees should be dressed at once.—JAS. B. RIDING.

[Our correspondent thinks the Currant bud mite is not new. We have been acquainted with it for more than a quarter of a century, and a correspondent has stated (page 221) that he has known it for sixty years.]

“MUSHROOMS FOR THE MILLION.”

AFTER a sale of upwards of 30,000 copies, another large edition of this manual was called for, and is produced. In an addendum to the seventh edition, the author says:—

“Though there has been an enormously increased supply of home grown Mushrooms during recent years, consumers appear to increase in much the same ratio: otherwise there must have been a much greater reduction in prices than has been recorded. Taking the Covent Garden prices in 1886, the quotations the first week in January were 6d. to 1s. a punnet, and in the corresponding month of the present year (1894) they were 9d. to 1s. Last year they were 6d. to 1s. Mushrooms were what may be termed dear in the first week of January, 1890-2, and cheap during the three preceding years at corresponding dates. The supplies fluctuate according to the weather. Even at the low current price of last year, many market gardeners who are expert Mushroom growers found this the most profitable of all their outdoor crops. Half crops will not pay any more than will half crops of anything else; nor will cultivated Mushrooms defray the cost of production in the months of June to September inclusive.

As a profitable combination, attention is called to the practice of growing Tomatoes under glass in the summer, followed by Mushrooms in the winter, one grower often finding the Mushrooms pay him as well as the Tomatoes do, though he gives 6s. a load for manure. Notes are added on growing Mushrooms in houses, accompanied by a photograph of a bed as produced by Mr. T. Wilkins, Inwood House Gardens. The edition is dedicated to Mr. Owen Thomas (with photograph), as the originator of the work. It has grown to 140 pages, the price remaining the same—1s., or 1s. 3d. post free from this office.



EVENTS OF THE WEEK.—As announced in another paragraph, the Committees of the Royal Horticultural Society will meet at the Drill Hall, Westminster, on Tuesday the 24th. At the same place and on that date the annual Exhibition of the National Auricula and Primula Society will be held. Mr. F. W. Burbidge of Trinity College Gardens, Dublin, will also give a lecture on a "Botanical Exploration in Borneo" at the afternoon meeting.

— **THE WEATHER IN LONDON.**—Since publishing our last issue considerable changes in the weather in the metropolis have taken place. Towards the end of the week showers were of frequent occurrence, and on Saturday, the 14th, rain fell heavily. The following three days were also showery, and rather cold; but Wednesday opened fine and much milder, and at the time of going to press the weather appears more settled.

— **THE WEATHER IN THE NORTH.**—Dull weather has prevailed generally throughout the past week, with a cold easterly wind. Part of the day has now and then been fine, but few days have passed without more or less rain. In the afternoon of the 11th a sharp thunderstorm occurred. The thermometer on the morning of Tuesday stood at 53°. Vegetation makes rapid progress.—B. D., *S. Perthshire*.

— **NATIONAL TULIP SOCIETY'S EXHIBITION.**—We are authorised to state that the date of the Show of the National Tulip Society, which was to have been held at the Temple Gardens on the 23rd of May, has been altered, in consequence of the rapidity with which the Tulip bloom has come forward. The Show will therefore be held, by permission of the Royal Horticultural Society, at the Drill Hall, James Street, Westminster, on Tuesday, the 8th of May.

— **ROYAL HORTICULTURAL SOCIETY.**—The next meeting of the Royal Horticultural Society will take place in the Drill Hall, James Street, Victoria Street, Westminster, on Tuesday, April 24th. A silver cup will be offered for competition among the growers of Daffodils, and the members of the National Auricula and Primula Society will hold their annual Exhibition. At three o'clock Mr. F. W. Burbidge will give a lecture on "Botanical Exploration in Borneo." Exhibitions of Bornean plants will be welcome.

— **THE PROPOSED PINK SHOW.**—We learn that it has been determined by the Committee having the proposed Pink Show in charge to hold a first exhibition at the Drill Hall, Westminster, on June 12th next, which will be the date of the Pansy Show also. The Committee, of which Mr. B. Wynne is Secretary, has so far arranged the schedule of classes and prizes that copies can now be had, and it is hoped that with laced or florist flowers and border varieties there will be a good display for the start. All who love Pinks, and these are legion, and all who grow them well, and these are fewer, may well strive to help make the show a success. We are indeed pleased to see that so delightful a flower as the hardy Pink is again looking up. Those who saw and smelt the bunches of blooms of that fine Pink, Ernest Ladham, at the Drill Hall on the 10th must have realised that such beautiful flowers merit all possible encouragement.

— **LONDON TREES.**—Concerning these, our correspondent, "J. R. S. C.," writes, in reference to the note by a "Strand Man" (page 280) upon those in the Savoy Garden:—One of the commonest trees in central London was the Poplar during the centuries when many little streams or brooks occurred about the City. An eastern suburb took its name of "Poplar" from the groves of this tree. The Willow, too, abounded; for example, "St Anne in the Willows" at Aldersgate stood formerly amongst these trees, and when they were cut down Limes were planted as a substitute. As houses increased the gardens of London diminished, and the land became drier from the vanishing of most rivulets. A very fine example of the Poplar may, however, yet be seen in the churchyard of St. Andrew's, Holborn, near Farringdon Street, and its leaves generally appear early. Of the numerous Elms which grew about the City during the eighteenth century scarcely a dozen remain. They have fallen victims to the weather or insects.

— **CHIONODOXAS.**—The disease which is the cause of the "smoke coloured" eye in *Chionodoxa sardensis* proves to be *Ustularia Vaillantii*, Mr. James Allen of Shepton Mallet having submitted it to Mr. W. G. Smith for identification. Mr. Whittall has kindly informed me that *C. sardensis*, with the small white eye and the same species blue to the centre, are found in different parts of the same district.—S. ARNOTT.

— **PYRUS ELÆAGNIFOLIA.**—The graceful drooping habit of this tree recommends it as being suitable for a prominent position in the pleasure grounds. Although belonging to the *P. communis* section it differs from that species by its leaves being much narrower, and by its more graceful habit. The flowers are small, and are produced early in April, in clusters of eight or ten, usually on the tips of the preceding year's growth. The foliage is of a beautiful silvery white, which adds greatly to the beauty of the tree.—D.

— **WOODBIDGE HORTICULTURAL SOCIETY.**—Roses have the leading place in the schedule of this enterprising Society, and the 25-guinea cup for twenty-four Roses (open to the world) naturally heads the list of prizes. There are sections for growers of not more than 1000 and 500 plants respectively open, also for local amateurs, and in this section the N.R.S. silver medal is offered for the best Hybrid Perpetual bloom. Hardy border flowers, plants in pots, table decorations, fruits, and vegetables are well provided for in a schedule of 195 classes. Mr. John Andrews is the Hon. Secretary.

— **QUEEN WASPS.**—Reading the remarks of Mr. R. E. Brain (page 280), and the number of queen wasps killed by him, made me inquire of the garden men employed here how many they had killed up to the present (April 14th). They inform me that between them over 250 wasps have been killed. As they get a penny each for all the queen wasps they kill it encourages them to keep a sharper look out for them than perhaps they would otherwise. Last year we adopted the same plan, killing over 240. We found it a great benefit when the fruit season arrived. It would be wise if the method was adopted in all gardens.—G. FOSTER, *Glendaragh Gardens, Teignmouth, Devon*.

— **NARCISSUS POETICUS ORNATUS.**—"A. D." (page 285) does well to draw attention to the value of this *Narcissus* for decoration. When growing in a mass it is a sight to admire, and the flowers are excellent for vases. I have some that were cut a week since, and still they are presentable. They should be cut in the morning with the dew on them, placing their stalks in water in a cool room at once. Last October I planted 2000 bulbs of this variety, and we have had over 4000 blooms. Some of the bulbs (English grown) produced three and four blooms, and in one instance I counted five from one bulb. In several cases I gathered twin blooms on one stalk, which is uncommon in this variety.—E. M.

— **AMELANCHIER CANADENSIS.**—At this time of the year the Canadian Juneberry is one of the most striking of the many flowering trees which adorn our gardens. Occasionally assuming a pyramidal habit, and growing to a height of 30 or more feet, it is more often met with as a tree of half that height with a large spreading head. The flowers are pure white, and are produced in great abundance on drooping racemes from 2 to 3 inches in length. When in full bloom the tree has the appearance of being covered with a mantle of snow. An additional recommendation for this desirable plant is that during the autumn the foliage assumes a brilliant orange red tint. An *Amelanchier*, which will be in great demand when better known, is *A. olegocarpa*. It grows but a few feet in height and flowers profusely, these qualities making it a desirable plant for massing.—D.

— **MR. WILLIAM DEAN.**—The 70th birthday of this sterling old florist being due on 20th of July next, the occasion is considered fitting for the presenting him with a testimonial in recognition of his long and disinterested services in floriculture. A well merited gift will be the more timely, since, as a circular before us intimates, "His seventieth year finds Mr. Dean very much incapacitated for work, especially during the autumn and winter months." He is, we know, the victim of a chronic bronchial affection, and we shall be glad if he can be enabled to enjoy the rest he really needs during the inclement season of the year. A representative committee has been formed for carrying out the project. Mr. George McLeod, 46, Cannon Street, London, is the Honorary Treasurer, and Mr. William Cuthbertson (Dobbie & Co.), Rothesay, the Honorary Secretary of the fund. They will be glad to acknowledge subscriptions that may be sent to them, and we shall have pleasure in forwarding any sums that may be received at this office for the Dean Testimonial Fund.

— WALLFLOWER SUTTON'S DWARF BEDDER.—This Wallflower is admirably adapted for bedding. The plants grow to a height of about 6 inches, and are now a mass of beautiful light yellow flowers, the feature about them being the absence of the tall central spike.—R. P. R.

— SWEET PEAS IN APRIL.—Sweet Peas are much appreciated during the summer, but during the month of April they are doubly so. At Shrover Hall, near Cosham, I saw in one of the vineries there a number of plants about 4 feet high, in 8-inch pots, flowering freely and filling the house with fragrance. They were most creditable to the gardener, Mr. W. Cleator.—VISITOR.

— READING GARDENERS' SOCIETY.—Mr. J. Crook of Forde Abbey Gardens, Chard, read a very interesting and able paper on "Hardy Trees and Shrubs" before the members of this body on the evening of the 9th. There was a large attendance, Mr. W. Lees occupying the chair. The subject was treated from a decorative aspect, and the exceeding beauty found in trees and shrubs strongly impressed. A cordial vote of thanks was given to Mr. Crook for his excellent paper.

— EARLY CABBAGES.—The Cabbage crop this year, on the whole, is in a less satisfactory condition than usual, owing to the exceedingly warm weather experienced at the time of sowing the seed, and afterwards. I never saw so many "bolters" as this year. In some plots that I have seen more than half the plants are useless. Our first sowing of Ellam's was made July 17th, which was a little too early considering the weather that followed. Having a number of small plants left over in the seed bed these were planted out later; they are now coming on as if from a second sowing.—E. S.

— SOUVENIR DE LA MALMAISON CARNATIONS.—I notice with great satisfaction that Mr. H. Prosser, in his remarks on the culture of these favourite flowers (page 286), fully supports my contention that a judicious use of the syringe is one of the greatest cultural aids towards preserving them in good health. Complaints about the fungus are more prevalent than usual this year. This is, I feel certain, in consequence of the bright weather of the last few weeks, which has been favourable for the ripening of the spores. This the use of the syringe, as clearly shown by Mr. Prosser, effectually prevents. If cultivators who are troubled with the fungus will use the syringe with persistent intelligence, they may yet do much towards restoring their plants to vigorous health.—H. DUNKIN, *Castle Gardens, Warwick*.

— VEGETATION IN SCOTLAND.—The Rev. David R. Williamson writes from Wigtonshire, N.B.—"This season is surely unprecedentedly early. In my garden Apple, Pear and Cherry blossoms already appear (April 10th), fully a month in advance of their normal time. Lettuces and other vegetables are showing above ground. The Sycamore trees are covered with leaves. The flower buds on one of my Maréchal Niel Roses growing on a south wall are more than half grown. Several of the Hybrid Perpetual Roses, notably Crown Prince, Crimson Bedder, and Jeannie Dickson, are equally far advanced. Gloire de Dijon and Souvenir d'un Ami—the earliest of the Teas—have reached a similar stage of development. Dr. Stuart of Chirnside, in Berwickshire, the raiser of those beautiful miniature rayless Violas, Violetta and Sylvia, writing to me on April 5th, says that at that date Aquilegia Stuarti, which is also his production, is already in bloom. My own Aquilegias are not equally developed; but they have been making of late remarkable progress, and will soon be in flower."

— A POTATO TRIAL IN SURREY.—Differing materially from the Potato trial or trials conducted in Wiltshire by the County Council of that shire, and recently referred to, is the one in a comparatively small way being conducted under the Surrey County Council at Bookham. Here a piece of land some 26 rods in extent, intersected by a 3 feet path, is planted. The rows are of ordinary field distances, as the trial is intended chiefly for the benefit of agriculturists and allotment holders. There are thirty-two sorts, most of them selections from a former trial, with a few quite new. All these have received the same form of manurial dressing—viz., superphosphate three parts, kainit two parts, nitrate of soda two parts, and because of the dryness of the weather and soil the nitrate was applied at once. Then there are twenty-four rows planted with Magnum Bonum for a manure trial, two rows being without any, whilst there are with the rest twelve divers mixtures. The ground is very open and on chalk, and generally well represent all the ordinary conditions of field culture.

— RAINFALL VARIATIONS.—In "Symons' Meteorological Magazine" for the present month a table of rainfall in March shows that at Borrowdale (Seathwaite) the fall was not less than 11.24 inches, while at Boston it was only 0.45 inch.

— BROCCOLI AND FROST.—Referring to "Hackwood's" remarks (page 281), I may say that the 33° of frost which we had in January killed all our Model, Standwell, and Dwarf White, and 80 per cent. of Late Queen Broccoli, which were growing on a border 15 feet wide on the north side of a brick wall 15 feet high. A few rows of Late Queen growing in the open quarter were left unscathed, and are being used at present. On the quarter almost adjoining the Late Queen a fine lot of Brussels Sprouts were entirely cut down.—R. E. C., *Alnwick*.

— CULTURE OF VIOLETS.—At a meeting of the Scottish Horticultural Association held recently at 5, St. Andrew Square, Edinburgh, Councillor Mackenzie presiding, Mr. Alexander Bogie, Anchans, Ayrshire, read a paper on the cultivation of the Violet, in which he animadverted upon propagation by means of runners, which he characterised as a reprehensible practice. He mainly advocated propagation of the Violet from side shoots, and described the treatment and cultivation of the flower, along with the attendant diseases to which it was liable, dealing specifically with the "Sweet Violet." In the discussion that followed stress was laid by several speakers on the difficulty of growing fragrant Violets near large cities. Mr. Macintosh, Peebles, urged gardeners to do their utmost to keep up their reputation in the matter of producing superior flowers to those cultivated by market gardeners. Mr. Mackenzie, Warriston, stated that if one point more than another characterised the past decade it was the steady progression of market horticulture. That was one of the most healthful symptoms of the present decade, and did much to stimulate interest in flowers.

— DRY SUMMERS.—The remarkable parallel between the spring of this year and the corresponding period of last year suggests, says the "Daily News," that we are going to have a repetition of our summer's experience in 1893. It is impossible to infer this with any sort of confidence, as the weather prognostications this morning will suggest. It has often been said, and said with truth, that the only thing that is regular about our weather is its irregularity. Nevertheless it is a fact that the exceptionally brilliant summers of our meteorological history have shown a tendency to come in groups of twos and threes. This is shown as far back as we can trace any records. Thus a dry summer in 1113 was followed by another one in 1114. The years 1135 and 1136 were both exceedingly hot and dry. Again in 1252 there was a great drought and much suffering, and the following year was nearly as bad. The three years 1324-5-6 were exceptionally dry and brilliant, and so were the years 1352-3-4, and 1473-4-5, and 1539-40-41. From time to time throughout our history ever since the same curious persistency has been observable. At the beginning of the eighteenth century came two dry years, and then a group of three of the same character. Again, 1717-18-19 were dry, and 1817-18 were of a similar character.

— DOUBLE PRIMROSES.—It is to be hoped that the note on double Primroses by "A. D.," on page 281, may lead to these flowers receiving a greater share of attention than has been the case for some time. I am sorry to say I have not the pleasure of possessing all those named. Through an error of judgment, in removing them to a position which proved too dry, I lost the crimson and rose varieties. The blush and Croussei I have never had. There are two whites, one being larger and later in flowering than the other. I have what I think may be three distinct purples, but one having been grown in a different position may possibly be similar to another. I am trying them together, but feel almost confident that they are distinct. In addition to this there are offered, by a nurseryman near London, varieties named "Brilliant," described as having deep purplish crimson flowers in trusses; "Original," dark lilac, each petal margined with white; and "Harlequin," rose, freely mottled with white. The double Polyanthus are still less commonly seen, and of these I have three varieties—"Golden Ball," "Derncleughi," and "Rex Theodore." I should much like to know if anyone has found a double variety of the common Primrose growing wild. This week I have examined some thousands of plants, and only in one case have I found a tendency to doubling present. This was on two crowns only of one plant, and consisted of two or three small petals in the centre of the flower. The common Primrose is very plentiful in this district, but it is only in some particular places that even the tendency to vary in colour is found.—S. ARNOTT, *Dumfries*.

— RHODODENDRON NE PLUS ULTRA.—A plant of this charming variety is now blooming profusely in the rockery of Messrs. Veitch and Sons, Chelsea Nursery, and forms one of the brightest ornaments in this structure. The colour of the flowers, which are of large size, is a singularly intense crimson scarlet, and borne with great freedom. It is a variety which should be more often seen in gardens.—H.

— EPIPHYLLUM RUSSELLIANUM GARTNERI.—This, continues our correspondent, is also flowering in the same house, and forming a beautiful sight. The number of brilliantly hued blooms borne by a medium-sized plant is extraordinary.

— COLCHESTER SHOW.—We find by a schedule before us that at the Show to be opened in Lexden Park, Colchester, on June 13th, ten-guinea silver cups are offered for twelve stove or greenhouse plants, twelve Orchids, and eight dishes of fruit; a five-guinea cup for table decorations, and Colchester Rose medals in two classes for amateurs. The schedule is comprehensive, and the Show Committee influential. Messrs. F. W. Friend and J. W. Potter are the Honorary Secretaries.

— RAINFALL AT SWANMORE.—Until Saturday last there appeared every promise of another exceptionally dry spring, as we had not had a drop of rain for thirty-two days, the last, 0.10 inch, having fallen March 13th. Most welcome, therefore, were the showers that fell during Saturday the 14th, and early on the morning of the 15th, amounting to 0.34 inch. The rainfall here for the year up to the present amounts to 8.13 inches, which is 2.05 more than fell last year up to the same date.

— THE CUCKOO, NIGHTINGALE AND ASPARAGUS.—Although the Isle of Wight is more favourably placed than even this part of Hampshire, the cuckoo was heard here March 31st, fifteen days earlier than last year. The nightingale I heard on the morning of the 10th inst., nine days earlier than usual. The first dish of Asparagus was cut from the open March 28th, which is unusually early. The weather has been very warm. During the night of 11th inst. the minimum reading was 50°. The hottest day was Sunday (8th inst.), when the thermometer in the shade registered 75°.—E. MOLYNEUX, *Swanmore Park*.

— WAGES OF THE LABOURERS IN KEW GARDENS.—We learn from the "Kew Bulletin" that the Lords of the Treasury, on the recommendation of the First Commissioner of Her Majesty's Works and Public Buildings, have been pleased to raise the minimum wage for labourers in the Royal Gardens to 19s. per week. It may be noted that before 1847 the minimum appears to have been only 12s.; in that year it was raised to 14s., in 1865 to 15s., in 1873 to 17s., in 1889 to 18s. The total rise of the minimum wage in the preceding half century has been about 37 per cent.

— GLASS HOUSES AND FOOTPATHS AT KEW GARDENS.—A fresh survey of the Royal Gardens having been made by the Ordnance Surveys, the opportunity has been taken, says the "Kew Bulletin," to obtain, through the courtesy of the Director-General of the Ordnance Surveys, an authoritative statement on several points which had been long in doubt. Two of these may be placed on record. The area in which cultivation is carried on under glass is 2.604 acres, and the linear extent of footpaths is about fourteen miles 48 chains.

— THE LAKE IN THE ARBORETUM AT KEW.—This fine piece of water, which is filled from the Thames, is the source of the water supply of the whole establishment. It had gradually become filled more or less with mud, in some places not less than 5 feet deep. The task of removing this has occupied the past three winters. We learn from the "Kew Bulletin" that a gang of reserve soldiers, supplied by the "National Association for the Employment of Reserve Soldiers," has been employed for the purpose, the cost being defrayed by a special vote in the estimates. The total cost has been about £300. The mud which had been all deposited from Thames water proved to have considerable manurial value, and is being employed as a top-dressing for the poor soil of the Arboretum.

— LEGUMINOSÆ COLLECTION.—From the same source we gather that the collection of hardy ligneous Leguminosæ near the Pagoda in the Royal Gardens, Kew, has, during the past winter, been entirely re-arranged. The long canal beds have been replaced by smaller beds in which the plants have been grouped, some beds being filled by a single species. The original soil, chiefly sand, has been removed to a depth of 2 feet, and good loam substituted. The collection is a large one, and we have every reason to believe that it will shortly prove of considerable interest to botanists and horticulturists, and a great attraction to visitors generally.

— SLUGS AND SNAILS.—Those persons who are greatly annoyed with these pests should be on the outlook for them. They appear to be numerous this spring, lurking in thousands beneath Hellebores, Sweet Williams, Aubrietias, and other dwarf growing plants. In the autumn I thought my garden was tolerably clear of them, but I observed many eggs lying about exposed on the surface. I destroyed several hundred eggs and snails beneath a plant 8 inches in diameter.—W. T.

— HORTICULTURAL CLUB.—The usual monthly dinner and conversazione took place on Tuesday evening in last week. There was a large attendance of members, and the chair was occupied by Sir John Llewelyn, Bart., Chairman of the Club. Amongst those present were Sir Alex. Arbuthnot, Messrs. John Lee, W. Marshall, Harry Turner, W. J. Jefferies, H. J. Pearson, C. E. Pearson, George Paul, W. F. Cooling, Geo. Bunyard, Philip Crowley, C. E. Shea, H. J. Seebohm, and others. A very interesting address was given by Mr. Geo. Paul on flowering trees and shrubs, and a profitable discussion followed, which was entered into by the Chairman and other members present. The table was profusely decorated with specimens of Himalayan Rhododendrons, furnished by the Chairman, and also with the blooms of some of the plants mentioned in the address. A cordial vote of thanks to Mr. George Paul was proposed by the Chairman, and carried with acclamation; to this a rider was added by Sir Alex. Arbuthnot, expressing the hope that the lecturer would send an abstract of it to the gardening papers, so that they might have the opportunity of studying it at leisure.

— ROYAL METEOROLOGICAL SOCIETY.—The fourteenth Exhibition of Meteorological Instruments, organised by the Royal Meteorological Society, was opened on Tuesday evening in last week in the rooms of the Institution of Civil Engineers, 25, Great George Street, Westminster. Each year's exhibition has been devoted to some special subject. "Clouds: Their Representation and Measurement," is the subject chosen for the present year, and a most interesting and instructive exhibition has been arranged, not only of instruments for ascertaining the direction and height of clouds, but also of sketches and photographs showing the various forms assumed by clouds. Most people are only familiar with the rounded or woolly-looking cloud called "Cumulus," but by looking at the pictures in this Exhibition it is readily seen that there is a large variety of the forms of clouds, which have all been classified and named. The first person to systematically classify the forms of clouds was Luke Howard, F.R.S., in 1802, and the portrait of this meteorologist naturally occupies a prominent place in the Exhibition. Some original water-colour sketches of clouds by Luke Howard are shown, as well as a large number of most beautiful photographs of clouds by the principal authorities in various parts of the world. A very interesting part of the Exhibition is the valuable collection of lantern slides and transparencies of clouds and other meteorological phenomena. In addition to the instruments, photographs, and drawings relating to clouds, the Exhibition also includes a number of other instruments, many of which are quite new in principle, such as barometers, thermometers, hygrometers, evaporators, anemometers, and marine and surveying instruments. The Exhibition will remain open till the 20th inst.

— CLIMBERS AND BUILDINGS (page 261).—That there are architectural features in many buildings that it would be vandalistic to hide with climbers, whether evergreen or otherwise, there can be no doubt. Who would, for instance, think of covering with Ivy some of our grand cathedrals or other public buildings? But then, how many buildings are there quite devoid of any architectural beauty, and which it is a mercy to clothe with some kind of greenery? This is, indeed, the case with the greater portion of modern houses, the crude or bald features of which, always most pleasing when hidden from sight by a clothing of Ivy or other climbers. Probably some houses are built purposely bald or unsightly, that they may be converted into objects of beauty by the gardener. A few climbers can convert the unsightly structure into objects of vegetable beauty; even a wood pile, which in its native ugliness we would gladly hide, becomes a pleasing feature when dressed with Ivy, Virginian Creeper, Tropæolum, or anything else suitable. In erecting a building of any description, it should always be considered whether to be covered with climbers or otherwise. To highly finish off externally any erection, and then plant climbers to later cover all this expensive work is as wasteful as it is absurd. Still, there can be no doubt, able as may be the architect, that we have greater innate love for the work of the gardener, when houses are effectively dressed with climbers, than we have for that of any architect. It may be that on the external wall or tower of some church

or chapel may be found some special feature that may be so far worth preserving as to merit full exposure; but generally a clothing of Ivy or some climber becomes a cloak that covers a multitude of architectural baldness. Ever since gardening has been known, apparently, have the habits of climbers in Nature been copied and utilised to beautify objects humanly erected that garden taste will not only never die, but will increase just as our range of house climbers is added to. The introduction of *Ampelopsis Veitchi* gave a great impulse to this form of gardening, and it is now perhaps the widest grown of climbers in the world.—A. D.



THE LEEDS PAXTON SOCIETY'S CHRYSANTHEMUM SHOW.

We are informed that the annual Exhibition of the above Society will be held in the Town Hall, Leeds, on November 6th and 7th, 1894.

CHRYSANTHEMUM MDLLE. MARIE CORDONNIER.

"Le Jardin," a Paris fortnightly horticultural journal which rarely gives its subscribers a coloured plate, has in its current number given an illustration of a new Chrysanthemum bearing the above name. It is a large, bold flower, measuring fully 8 inches across, very double, with grooved florets of medium width. The colour appears to be a bright shade of crimson amaranth with a gold reverse, and the plant has been grown according to our exhibition method of three or four blooms on a plant, which is not a common one in France, although that system is now more popular than it was a few years ago. We are not told the raiser's name, but it is offered for sale by M. Louis Dallé, who exhibited it for the first time at the autumn Show of the National Horticultural Society of France in 1892. The lady after whom it is named is the daughter of Mr. Anatole Cordonnier of Roubaix, a well-known French enthusiast in Grape and Chrysanthemum growing.

ITALIAN CHRYSANTHEMUMS.

IN the spring of 1892 an Italian nurseryman at Florence announced for sale a set of new seedling Chrysanthemums, comprising forty varieties raised from Mrs. Alpheus Hardy, Edwin Molyneux, Edouard Audiguier, Pelican, Mme. Hoste, and others, all of which were introduced into England by some of our trade growers. Of these in the following autumn but few were to be found worthy of notice, *Principe de Trahia*, a large long-petalled Japanese of a wine coloured rose, being perhaps the best; *Conte Ottaviano da Porto*, a white incurved kind, was attractive, although possessing no special merit when compared with others of that type already grown here. From two other Italian growers sets of seedlings were also received, but it appears doubtful whether they ever came into prominent notice, for I cannot trace any mention of them in my notes for the seasons of 1892 and 1893.

Simon Delaux in a recent catalogue also enumerates others, which he describes as the Italian novelties of 1893, but none of these seem to have been introduced into this country as yet. The probability is that our English nurserymen have quite enough to do with importing the French and American sorts, among which they do find a fair percentage of new flowers worthy of attention, and thus have not paid particular regard to the novelties from Italy. Among my catalogues for the present spring I have received one from a firm at Milan offering fourteen varieties of seedling Chrysanthemums for distribution, and as these will be purchased and grown by one of our eminent specialists in Chrysanthemum cultivation there may be a chance of finding something interesting and novel among them when they flower in the autumn.

Excellent, however, as they may possibly be, it seems that we are being considerably overdone by our friend the intelligent foreigner.

OLD AND NEW CHRYSANTHEMUMS.

Mr. W. H. Lees, on page 133, strikes a keynote that will find an echo in the minds of many of us who have known the Chrysanthemum for the period he mentions. What, however, is the most curious fact concerning the popular show varieties of 1883 as compared with those of 1893 is this, that many of the former had a much longer life in those days than the best ones have now. Thus at the date he mentions *Fair Maid of Guernsey*, *Madame C. Audiguier*, *Soleil Levant*, *Marguerite Marrouch*, *Baronne de Prailly*, *M. Ardène*, *Peter the Great*, *Cry Kang*, *Sarnia*, *Grandiflorum striatum*, *Elaine*, *Triomphe du Nord*, *Mdlle. Moulis*, *Ethel*, and *Oraele*, were all raised in the previous decade or before, and were therefore in some cases ten, fifteen and even twenty years old when shown. In the list of elected varieties recently published in the Journal as the best now-a-days only very few in comparison were raised between 1880 and 1889, and those mostly towards the close of that period. Without verifying each name separately, for my memory serves me fairly well in this matter, *Vivian Morel*, *Edwin Molyneux*, *Mdlle. Marie Hoste*, *Sunflower*, *Etoile de Lyon*, *Stanstead White*, *W. H. Lincoln*, *Avalanche*, *Mrs. F. Jameson*, *Beauty of Castlewood*, *Puritan*, *Miss A. Hartshorn*, *Mrs. C. Wheeler*, *Boule d'Or*, *M.*

Bernard, *Alheric Lunden*, *W. W. Coles*, *M. E. A. Carrière*, *Coronet*, and perhaps half a dozen more are the oldest out of all those named. Hardly any of them could be considered more than five years old last season, and if we except *Boule d'Or* and *M. Bernard* there was certainly none of ten years' standing. The remainder, which form by far the larger proportion, are only of two or three seasons' standing.

There is, as Mr. Lees seems to fear, every reason for supposing that the leading Japanese show flowers of 1893 will be practically extinct in 1903. New and capable raisers are annually coming into the keenest competition possible with the old ones. Names that were once familiar to us as eminent growers of seedlings are unheard of now, and whether for better or for worse the best twenty-four Japanese are never likely to remain the same for any length of time while the flower offers so wide a scope for their skill as it does at present. When raisers, other than English, can appreciate the merits and quality of the incurved section we may possibly see another revolution in the cultivation of this protean flower.—P.

LIST OF DWARF CHRYSANTHEMUMS.

IT is not possible to make a long list of white-flowered varieties suitable for blooming in masses, and at the same time to exclude Pompons, and still be limited to 2½ feet in height. "B. J." (page 277) does not say in what manner the plants are to be grown so as to restrict them to the height stipulated. If on the non-toppling plan the list will be a very short one indeed. By removing the point of each shoot about twice during the season the plants could be so managed that several really good and free-flowering varieties may be included under this category. Certainly they would not grow beyond 3 feet, assuming, of course, that the cultural details are carried out in a proper manner. With a view, therefore, of imparting more information, I have divided my list into two sections—viz., those that naturally do not grow beyond 2½ feet, and those who can be kept about 3 feet by manipulating the branches.

"B. J." says "not Pompons," but I must break through these instructions slightly with a view to include one variety, *Sœur Melanie*, which is excellent for producing white flowers in abundance. Varieties of 2½ feet are *Madame C. Desgranges*, *Lady Fitzwygram*, *La Vierge*, *Mdlle. Leon Lassali*, *Grace Attick*, *Madame Gastellier*, and *Mons. Gustave Grunerwald*. Varieties under the topping method would include *Florence Davis*, *Mrs. G. Rundle*, *Avalanche*, *Lady Selborne*, *Madame Mezzard*, *Eynsford White*, *Mdlle. Lacroix*, *Princess Blanche*, and *Bouquet des Dames*.—E. MOLYNEUX.

MR. MOLYNEUX'S BOOK.

WHEN Mr. E. Molyneux first issued his treatise on growing and showing Chrysanthemums in 1886 it met, as might be expected at the close of his successful exhibiting career, with a prompt welcome. The popularity it so soon won has been abundantly maintained, and oft recurring editions became requisite to meet the constant demand. While all that was good in the original has been retained, something has been added to subsequent issues, until the last edition, the eighth, harks out to 122 pages. This contains the author's estimate of the latest new varieties, and is thus, as he says, brought "up to date." Having regard to quality and quantity, few will question the proposition that Mr. Molyneux gives good value for money in his popular shillingsworth. It is, however, the way of the world to expect those who give much to give more, and we know some of the worldlings would like to have a good index. The want is apparent in another popular manual that is always selling, and if the critic who pronounced what he considered a fitting doom for the author who produced a book without an index could have his way, Messrs. Molyneux and Wright would be hung forthwith. But they are safe, for the critic is gone, and we now live in humanitarian days.

CANONS OF CHRYSANTHEMUM JUDGING—ATTRIBUTES.

I NOTE the reference (page 277) to my opinion, expressed some years ago, in regard to the Wrightian system of judging Chrysanthemums. The opinion then expressed is my opinion to-day—the imperfections of all human schemes and "up-to-date" ideas being understood. I have used the system every year upon all occasions when requisite up to the present time, and this not only in judging Chrysanthemums, but collections of vegetables as well as cottage and allotment gardens, with most satisfactory results since 1887.

In reference to the "attributes" to be kept in mind when judging, I am of opinion that depth and solidity must go before mere diameter. Diameter without proportionate depth is mediocrity, and very common.

INCURVED.

Depth and solidity	...	...	...	...	3 points
Diameter	...	...	...	...	2 "
Purity of colour and symmetry	...	...	...	...	2 "
Breadth of floret	...	...	...	...	1 "
					8

JAPANESE.

Depth and fulness	...	...	...	...	3 points
Colour and freshness	...	...	...	...	3 "
Diameter	...	...	...	...	2 "
					8

It will be observed that I substantially agree with Mr. Wright's "formulae" of attributes, and I doubt if he will differ very much from my slight modification.—J. UDALE.

FRUIT TREES AND LIQUID MANURE.

THE leading article on "Stunted Fruit Trees," by "Experientia Docet," in the *Journal of Horticulture* of April 12th, is worthy of careful study by all gardeners, and no doubt many readers will preserve it for future reference. Your correspondent's remarks anent the watering of fruit trees at this time of the year will at once commend themselves to every unbiased mind, for many others, like myself, are convinced by practical experience of the wisdom of such advice, and also that many valuable crops of fruit, both under glass and outdoors, are annually lost by the omission of this simple but very important matter.

A few years ago, while serving as a journeyman under a good



FIG. 49.—IRIS HELENÆ.

"chief" in a private garden, where Peaches, Nectarines, and Cherries were extensively grown both inside and out, I well remember that, although the trees were judiciously attended to after the fruit had been gathered in the spring, just prior to the trees coming into bloom they were carefully examined, and any showing signs of an enfeebled condition were treated with a good soaking of weak liquid manure, which always resulted in a good set of fruit. At the same time, I do not consider it would be wise to indiscriminately treat every tree in this way. Each requires its own special line of treatment, which must be left entirely to the gardener's judgment. No rule-of-thumb gardening here, if you please; but rather an extra use of brains.

If anyone will take the trouble to carefully examine the sexual organs, say of the blossoms of a Peach tree that has been seriously enfeebled by overcropping or drought during the former season, they will find that in most instances those organs are very weak and small, and cannot therefore properly perform the work Nature intended them to do. The pistil will, in the majority of cases, extend but a very little way beyond the ovary, hence the difficulty of proper fertilisation and the ultimate wholesale dropping of the embryo fruit. In such a case

the judicious application of liquid manure would undoubtedly help the tree to regain some of its former vigour and strengthen the sexual organs.

Some four or five years ago a friend of mine, a smith by trade, sought my advice respecting a Pear tree growing in his garden that "blossomed like a sheet," as he termed it, every spring, but never produced a fruit. The cause of failure was undoubtedly on account of the tree carrying too much blossom, thereby becoming completely exhausted. I prescribed plenty of liquid manure for the remainder of the season. My directions were not carried out exactly in the way I had intended, but the following season the owner of the tree called my attention to a splendid crop of fruit. Instead of feeding the tree with liquid manure, he had cleared all the rubbish out of his workshop, which included scraps of iron, horse droppings, and hoof parings, and tipped the whole around and about the stem and roots of the tree, for as he said, "It was too much trouble to give liquid, so I made a rubbish heap there instead," and Nature did not fail to avail herself of it.

Depend upon it, trees furnished with a moderate amount of blossom, which will naturally be stronger, are the ones to tell a pleasant tale later on; hence the advisability of a judicious thinning of the bloom on all overlaid trees, which will prove a great help at such a critical period. Nature demands for every tree its own peculiar conditions for a favourable development, and if we would be her "assistants," she demands of us not only keen observation, but intelligent judgment.—HEDLEY WARREN.

THE note by Mr. Duncan (page 286) is opportune. I am positive that many fruit trees growing against walls suffer for the reason there indicated. In light sandy soil especially the moisture is quickly absorbed to the detriment of the trees. When the roots do not obtain enough moisture they cannot be expected to store sufficient nutriment for the perfection of foliage and fruit together. Brick walls absorb much more moisture from the soil than many persons seem to realise. Apricots, especially, have suffered in the past from a lack of moisture at the roots. Peach and Nectarine trees are often regarded as being unsuitable for a particular locality, when, if the truth could be ascertained, the real fault lays at the roots.

It is difficult to provide fruit trees with too much root moisture in any soil but that which has a subsoil of clay. Where the subsoil is closely allied to the latter ingredient it is, however, often freely mixed with flint or other stones, rendering it porous and consequently able to absorb more water than is generally supposed. It may yet be rather early to commence watering where the ground is heavy and retentive of moisture, but all the same, it would be well to make a close examination of the soil. If found dry on the surface only a light watering would suffice, followed by a mulching of half-decayed stable manure with a view of maintaining the surface roots in this position by keeping them cool and moist. If the opposite is the case they will go downwards in search of moisture.—E. M.

IRIS HELENÆ.

THIS is a charming Iris of the *Oncocyclus* group, and a flower of it exhibited by Mr. H. J. Elwes, Colesbourne, at a meeting of the Royal Horticultural Society, on the 10th inst., attracted some attention. It is said to have been introduced from the desert between Egypt and Palestine. As depicted in the illustration (fig. 49) the flower is comparatively large and of a striking colour. The standards are broad and erect, of a purplish hue, while the falls, although rather smaller, are none the less conspicuous, these being a rich velvety purple, passing to nearly black in the centre. A first-class certificate was awarded Mr. Elwes for the species, and the engraving has been prepared from the flower exhibited on the above mentioned occasion.

CULTURE OF THE VIOLET.

HAVING for some years been an extensive grower of these favourite flowers, and with a fair amount of success, I have several times been asked for details of my treatment. I will, therefore, endeavour to give them for the benefit of others who may not have been so successful. My first experience dates back some twenty-three years, when in a large garden near London I had a number of frames containing Neapolitan Violets to look after. At that place they were given some bottom heat to assist them. We had what were considered good Violets then, but not such as we expect to grow now without the bottom heat. I saw that mode at one other place, but I think it has quite died out, at least I trust so, as it is possible to have fine blooms without that extra labour.

I consider the month of April the best time to make a start with them. Procure some good healthy plants, divide them into single crowns, choosing the strongest, plant out on a well prepared border that is partially shaded; it should have been well dug, but not given any rank manure. Some old spent Mushroom bed I usually mix in, with a little burnt refuse. If possible choose showery weather, and plant 9 inches apart each way. Should the weather be dry the plants must be watered every evening with a rose can until they are established and throughout the summer occasionally, also stirring the soil among them. Give constant attention in removing all runners and flowers.

By the end of September they will have made strong, healthy plants

fit for lifting for putting in frames. These are usually placed in an open position facing the south, but at my last employer's, the late Earl Sydney at Frogna, there was an old pit facing the west that was used for Violets, and which always gave a satisfactory display of good flowers, although the lights were of an ancient kind, having a large amount of woodwork about them. Still, I think the south the best position where possible. For the past few years I have grown Violets in a long pit that is used for Cucumbers in the summer, but any frame will answer the purpose, though the soil must be placed on a firm bed and the plants arranged near the glass.

The compost I use is about three parts loam, one spent Mushroom bed, one part old leaf soil, and a few wood ashes. Some persons would doubtless employ more loam. Of the above mixture I use about 6 inches to plant in. The Violets require careful planting and to be made firm. Leave the lights off entirely until approach of frost. Keep off all flower buds until the plants are well established. They are benefited by syringing every evening when first planted. Give air on every possible occasion, and remove runners and small flowers, also stir the soil among the plants. After they have been flowering some time give them a light dressing of chemical manure.

By the above treatment I have found it possible to get an abundance of good flowers from October to April, both of Marie Louise and Neapolitan, although the latter variety produces rather smaller flowers. The Double White I do not grow extensively, as it is so late in giving its flower, but it is beautiful after a mild winter when planted under a north wall. While at Frogna I grew another double variety, a very deep blue, most exquisitely scented, but I forget the name. I think it was one of Messrs. Cannell's introduction, it was a gem out of doors but useless for forcing.

The above remarks describe my general method of culture. Some allowance must of course be made at different places as to the composition of the soil, but with me Violets have proved themselves more accommodating than most plants. I have also grown large numbers in similar soil in 6-inch pots, and they produce flowers quite equal to those planted out, being also very useful for the conservatory during the winter.—J. H. HOWARD, *Benham Gardens, Newbury.*

NARCISSUS WEARDALE PERFECTION.

THE accompanying illustration (fig. 50) depicts a bloom of the magnificent Narcissus Weardale Perfection, for which Messrs. Barr & Sons, Long Ditton, secured a first-class certificate at the meeting of the Royal Horticultural Society held on the 10th inst. As will be seen from a glance at the engraving Weardale Perfection is a massive flower, and is of a light primrose yellow. Nothing definite as to the history of this splendid acquisition appears to be known, but Mr. William Barr informs us that "it is supposed to be one of the late Mr. Backhouse's last hybrids, flowering for the first time five or six years back."

EXTERMINATING THE MEALY BUG.

AMONGST our enemies in the glass department not any, I think, are such a constant source of annoyance as the mealy bug. An innocent looking "beastie" is this *Coccus adonidum*; "but the habit does not make the Monk," and those who have experience of this mealy rascal know too well how incessant are his labours, and how he seeks to multiply and replenish our houses with his kith and kin. To those who only know this enemy by repute "ignorance is bliss" indeed. Not content with the injury he inflicts on our plants, a balance of the evil is carried over by causing damaging reflections on the character of the garden and the gardener, and but scant sympathy is accorded to sufferers. Why it should be so is not easy to explain, unless by analogous reasoning one thinks of another trouble for which there is no pity, viz., the toothache.

Is it possible, I have at times asked myself, to stamp out this pest, and have done with it for good and all? "Killmright" out and establish a quarantine. Yes, I think it is possible, but only by the same untiring and persistent efforts made by the bug for existence. We have now insecticides galore to help us, though the foe is aided and abetted by his friends the ants. This *Coccus* might with some reason have been called "irritans" instead of *adonidum*, although the latter specification savours of his generative powers, which are truly marvellous.

The mealy bug does not appear to be the most voracious of feeders; but I am inclined to award him the palm for the unsanitary conditions of insect life. When ensconced in some creeper on the roof, those plants on the stages directly underneath suffer as much or more from his evil communications as does the plant above which affords him board and lodging. Clad in his waterproof mantle, ordinary syringing, which is such a powerful agent in dealing with red spider or thrips, is in this case practically useless. This bug was not born to be drowned, he seems rather to enjoy being carried by water to "fresh fields and

pastures new." Nor has fumigation but little effect beyond asphyxiating a few unwary ones out on the war path. Weather permitting, I think there is no plan so good as removing plants and parasites to the open and "having it out" with them there.

With the various and good insecticides now to hand expense is more a matter for consideration than efficiency in selecting the article to form the wash, hence the reason that petroleum has found favour in many places. Effective as it is, the greatest care is necessary in using so powerful an agent, or the victory, if gained, may be dearly bought. To those who contemplate using petroleum on Gardenias or other subjects planted out I would say "Don't!" With even less than the orthodox quantity of oil, a wineglass to four gallons of water, if carried out from time to time results in oil accumulating in the soil, and that means death to the plants. With plants in pots, after the bath, a combination of dipping and syringing, proper draining can be given, and whatever insecticide may be used in solution to avoid contact with the roots is advisable. Disagreeable are these washing days, and, alas!



FIG. 50.—NARCISSUS WEARDALE PERFECTION.

only comparative cleanliness results. The foe is subdued, but not exterminated. It is the battle, after which we are apt to rest upon our laurels, when, if followed up by persistent light skirmishing, the happy desideratum might be gained, and this little pest annihilated. To this end a camel's hair pencil or small sponge on a stick, with a bottle of Fir tree oil or Fowler's mealy bug destroyer, used neat, forms a ready means of giving survivors their quietus. But this light skirmishing amongst the plants cannot commence too soon after the big field days. A cursory glance over a newly dipped house of plants may cause some self-congratulation, which closer investigation probably shatters.

Preparing once for a visit from an old friend, I made superhuman efforts the previous day with a house of Crotons, had them all out and through the usual tubbing process. He came, and it was with some degree of pride I threw open the door, glancing at my polished Crotons. But, alas! for the sequel. He stepped in with the exclamation, "My, here's a big 'un!" Aye, and he was a "big 'un," walking the rim of the nearest pot. I felt mad. Where infested vineries have to be dealt with no such difficulty obtains in clearing the house "held by the enemy" as in the plant department. The resting period gives facility for thorough cleaning and more drastic measures. My experience of bug on the Vines is that the tar dressing is a remedy incomparable, though I have never used the full complement of tar as prescribed in the mixture for painting the canes. Needless to say, the usual *modus operandi* of scrubbing the Vines, painting the woodwork, and all and

every detail of thorough cleansing was carried out; and though at thinning time (seldom before) an occasional specimen of the coccus was met with "taking his walks abroad," a dab of the sponge from the bottle cut short his career and all went happy ever after.—E. K., *Dublin*.

NOTES FROM BOOKHAM.

WITHIN five minutes' walk of Great Bookham Station on the South-Western Railway, that runs from Wimbledon to Guildford, and just on the margin of that popular summer resort Bookham Common, Mr. Jas. Douglas, the well-known and esteemed ex-Secretary to the National Auricula Society, has pitched his tent. The simile, however, is hardly exact, because here Mr. Douglas looks to the ending of his days when circumstances over which no man has control shall terminate his residence as gardener at Great Gearies, Ilford. A meadow of some five acres, with a stiffish subsoil, but generally of a very retentive nature, is in process of conversion into a florist's nursery. Three large span-roof glass houses have been built, a commodious bothy, office, and packing shed, and there are many moveable frames. Chief of the present stock are Carnations, of which there are enormous numbers, and many of them are being grown to bloom and make stock in large pits. Cinerarias blooming most profusely form yet a strong feature, as there are many hundreds of fine plants. There are also numerous good plants of herbaceous Calceolarias advancing into bloom, and there is, for all who love these beautiful flowers, a splendid collection of Show Auriculas, plants of all the sections in bloom by hundreds, and under the exceedingly high temperature provoked by the hot sunshine are found very difficult indeed to keep in check for showing at the Drill Hall on the 24th. Outdoors ground is being gradually broken up, and amongst other things there is planted a good collection of pyramid and bush Apples, Pears, and Plums, which look as if they liked the soil. Presently much of the ground now in process of trenching will be planted with Hollyhocks, of which Mr. Douglas has a fine collection of seedlings from the best doubles. Prominent, however, at present are Cinerarias, Carnations, and Auriculas.

CINERARIAS.

These are in two of the houses, one being specially devoted to grouping the plants into colours for seed production. The bees are busy amongst the flowers, and many of the insects seem to find entrance easier than is exit. The plants are grouped as pure white, white and rose, white and deep red and crimson, fine self reds and crimsons, white and pale blue, white and deep blue, white and purple, purple self, and deep blue self, thus giving a rich variety of colouring allied to fine flowers of the best form and substance. The strain is undoubtedly a very gay one for ordinary greenhouse or conservatory decoration, and seems by its robustness to have in it abundant seed-producing properties, for the work of gathering seed has already commenced.

CARNATIONS.

How large the collection of these popular flowers may be here it is difficult to say, but some 3000 of strong young plants in pots were being packed, and when gone would hardly be missed. But apart from the collection in small pots, the numbers in 9-inch pots, some singly, some in pairs, in the houses, in frames, and standing outdoors where they can have a little protection at night if needed, are indeed legion. As is the rule with the florists who grow Carnations of all the finest forms as a speciality, all the stronger plants are flowered in pots. Still, indoors or out, there is very little evidence of the *Dianthus fungus*, and none whatever of the Carnation maggot, for the plants are in almost rude health.

A special feature of the Carnations is the superb collection raised and shown so often at the Westminster Drill Hall by Mr. Martin Smith, the varieties having passed into the hands of Mr. Douglas exclusively. True stocks of these, that are being now rapidly increased both by cuttings and layers, may be seen, some being of exceptional robustness. Most of these will be put into commerce next winter. They include The Churchwarden, deep crimson; Princess May, a great beauty, rich crimson; Mr. C. Freemantle, very fine crimson scarlet; Sir Evelyn Wood, quite a Malmaison, blush striped scarlet; Mrs. E. Hambro, deep red; Mrs. Stuart McRae, The Burn, a charming pink; King Arthur, and Miss Audry Campbell, fine yellow. There is also a large number of Mr. Douglas's own yellow-ground varieties. It is very interesting to contrast the very poor growth made by the show bizarres and flakes as compared with the newer strains, and it is no matter for surprise that the general public should have such fancy for the newer robust growers that do so well both outdoors and in pots give such fine blooms, and in the majority of cases have such high market value for the supply of flowers for cutting.

AURICULAS

Mr. Douglas seems to be able practically to discount the common impression that Auriculas are very slow propagators. He is working up a large stock, and has some 1800 plants of all the best show sorts in small pots in frames that should make excellent flowering plants next spring. In one of the houses, however, and of necessity shaded, there is a very fine display; some hundreds of show sorts, green, white, and grey edged, also the selfs in exquisite variety. Not being of the cult perhaps I do not admire the edged flowers so much as I do the selfs. All the same, one has but to minutely examine a white-edged Auricula, for example—and there are some unusually fine forms at Bookham—to realise that

there is no flower in existence that has been, as it were, built up in the course of many years by the florists that is so wonderfully made—so marvellous in all its component parts as is a perfect Auricula. The selfs naturally most attract the attention of the uninitiated into the floral mysteries of Auricula conformation, because they have points that are easily understood and appreciated. A thrum eye, a perfectly round cup of golden hue, a perfect ring of dense white paste, and then a ground of some well defined colour, such as golden, mauve, blue, red, crimson, or black, are all elements easily understood and appreciated. A few very beautiful are Buttercup, rich yellow; Sapphire, blue; Fire-fly and Ariel, fine rich reds; Blackbird and Sir W. Hewett, fine blacks. However, there will be ample opportunity to see Auriculas at the Drill Hall on the 24th inst., and further reference to sorts is needless. It is certain that Mr. Douglas, whose reputation as a florist is of the highest, means to grow only the best of everything he cultivates, and no doubt very soon Bookham strains of plants and seeds will become familiar in our mouths as household words.—A.



ROSE SHOW FIXTURES IN 1894.

- June 13th (Wednesday).—Colchester† and Isle of Wight (Shanklin).
- " 26th (Tuesday).—Westminster (R.H.S.).
- " 27th (Wednesday).—Windsor (N.R.S.) and Richmond (Surrey).
- " 28th (Thursday).—Canterbury, Eltham, and Sutton.
- " 30th (Saturday).—Sittingbourne and Brockham.
- July 3rd (Tuesday).—Farningham and Bagshot.
- " 3rd (Tuesday).—Diss.
- " 4th (Wednesday).—Croydon, Reigate, and Tunbridge Wells.
- " 5th (Thursday).—Hereford and Norwich.
- " 7th (Saturday).—Crystal Palace (N.R.S.).
- " 10th (Tuesday).—Gloucester and Wolverhampton.*
- " 11th (Wednesday).—Hitchin and King's Lynn.
- " 12th (Thursday).—Bath, Harleston, Woodbridge, and Worksop.
- " 14th (Saturday).—New Brighton.
- " 17th (Tuesday).—Helensburgh.
- " 19th (Thursday).—Halifax (N.R.S.), Halesworth, and Trentham.
- " 21st (Saturday).—Manchester.
- " 26th (Thursday).—Southwell.

* A Show lasting three days. † A Show lasting two days.

Any date of Rose shows, or of other horticultural exhibitions where Roses form a leading feature, not named above, I shall be glad to receive as soon as fixed, for insertion in future lists.—EDWARD MAWLEY, *Rosebank, Berkhamsted, Herts.*

THE PARENTAGE OF ROSES.

WHEN we consider the characteristics of a Rose depend entirely upon its parentage, the value of this subject can scarcely be over-estimated by the earnest rosarian. The late Mr. Bennet, the raiser of Grace Darling, Lady Mary Fitzwilliam, Cleopatra, Princess of Wales, Viscountess Folkestone, and Mrs. John Laing, who expressively termed his finest productions "pedigree Roses," was not one who undervalued the origin of a Rose. The attributes that he aimed at are apparent in the varieties I have named—vigorousness of habit, clearness and distinctness of complexion, exquisiteness of form (as in Mrs. John Laing), attractiveness of fragrance (as in Viscountess Folkestone, which in this respect is only rivalled by La France), and lastly, what is by no means a minor qualification, great floriferousness. That his ideal was realised cannot be denied.

The chief parents of modern Roses are the following. From La Reine descended Auguste Mie, François Michelon and Paul Neyron. Général Jacqueminot, still one of the most brilliant Roses, has given us Pierre Notting, Xavier Olibo, Sénateur Vaisse, Charles Lefebvre, Alfred Colomb, Prince Camille de Rohan, and Duke of Edinburgh, which, as Mr. Wm. Paul informed me last year, he raised from seed of the famous "General" at Cheshunt in 1868. To Jules Margottin may be attributed Beauty of Waltham, Countess de Serenye, Duchesse de Vallambrosa, Magna Charta, Abel Grand, and Thérèse Levet. To Sénateur Vaisse we are indebted for Madame Victor Verdier, while Charles Lefebvre, raised by Lacharme in 1861, has given us Dr. Andry, Horace Vernet, Paul Jamain, Lord Macaulay, and Mrs. Harry Turner. Those beautiful dark Roses, Abel Carrière and Jean Liabaud, are descendants of Prince Camille de Rohan, while A. K. Williams is a derivation from Alfred Colomb. From the Duke of Edinburgh has been derived Brightness of Cheshunt, Duke of Connaught, Reynolds Hole, Duke of Teck, and Sultan of Zanzibar. Of these the variety which bears the Dean of Rochester's name is, as a rule, greatly commended by rosarians, and equally condemned by amateurs. It produces few blooms, which are easily tarnished by strong sunshine or rain. On the other hand, such varieties as Duchess of Albany, Caroline Testout, and Augustin Guinoisseau inherit the best qualities of the parent Rose La France.

In several instances the offspring is superior to the parent. Lady Mary Fitzwilliam is surpassed in beauty by White Lady, Isaac Periere

by Mrs. Paul; Baroness Rothschild is eclipsed by that noblest of her offspring, Merveille de Lyon, though the premier position of this is endangered by the Marchioness of Londonderry and Margaret Dickson. These have, in addition to their great beauty, the element of fragrance, a qualification, however, which some exhibitors regard as of secondary consideration.—DAVID R. WILLIAMSON.

ROSES AT THE ROYAL HORTICULTURAL SOCIETY.

THE meeting at the Drill Hall on the 10th inst. was worthy of a crowded attendance, as the flowers sent by various growers, more especially Daffodils and Roses, were unusually good. One could have spent hours of pleasure looking at these collections grown by some of our greatest flower experts, but if one may discriminate where almost everything in evidence was above the average, I should like to mention the exhibits of Roses. Messrs. Paul & Son and Messrs. Rumsey of Waltham Cross showed pot Roses, and Messrs. Frank Cant, George Mount, and Cooling cut flowers.

In Messrs. Paul's collection was a specimen of Caroline Testout, one of the best I have seen, there being two very fine flowers on the plant. If one were certain that this Rose, when grown out of doors, would remain constant to what is apparently its true form, it might be safely grown in large numbers, as the colour and scent are in every way desirable, but so far I have found the blooms turn into round balls when fully expanded. In Messrs. Paul's collection there was also a new seedling Tea which I believe is a cross between Anna Olivier and Innocente Pirola. If size can be obtained this Rose should take a good position amongst Teas; its deep colour struck me as being very remarkable considering its parentage, and it seems likely to have the beautiful point of Innocente Pirola.

Mr. Frank Cant's exhibit was the gem of the Show. Amongst the flowers of exceptional excellence in his boxes were Madame Lambard, two specimens being unusually fine flowers, both size and substance being remarkable. How seldom we now see it staged to advantage in the summer shows. Ethel Brownlow, staged in its most perfect state. I would class one of those shown as fit to compare with the best I have ever seen. The Bride, also well grown, two being exceedingly good flowers; and last, but not least, Souvenir d'Elise. If Mr. Frank Cant can grow in abundance such flowers under glass as those staged in the Drill Hall on last Tuesday, his reputation will be soon established as the premier grower of forced Roses, if the term "forced" can apply to the culture of Roses under glass.

Mr. George Mount of Canterbury had a very good collection of cut Roses, his Catherine Mermets being very beautiful.—C. J. G.

To those who have a hobby there are certain indications which stir up the love of it within them, and so the Rose grower, and more especially the Rose exhibitor, feels as the spring advances that the shadows of coming events stimulate the ardour within him. The Show last week at the Westminster Drill Hall was well worth coming up to London to see, and moreover there was the excitement even of a new Rose in a very pretty flower exhibited by Messrs. Cooling & Son of Bath, and called by them Lawrence Allen, coloured blush pink, bearing perhaps too great a resemblance to Spenser. It is said to be a seedling between Mrs. John Laing or Baroness Rothschild and Merveille de Lyon. It was given an award of merit by the Floral Committee, being justly considered that no higher award should be given to it until blooms could be had from the open; its habit seems to be vigorous, and we shall hope to see more of it by-and-by.

In the stand exhibited by Mr. Frank Cant there were some remarkably fine blooms. The principal flowers were, as might naturally be expected, Teas, and amongst them were fine examples of Madame de Watteville, Marie Van Houtte, Anna Oliver, a flower of very great substance and fine build; Souvenir d'Elise Vardon, large and fine; Cleopatra, one of the best flowers of this new and promising variety that I have seen; The Bride, exquisite in its shape and purity of colour; Ethel Brownlow, a very grand flower, bringing to remembrance one exhibited by the same grower last year, evidently showing that he knows how to grow this fine variety well, and several others. It is one of the great charms of these early shows that Tea Roses are shown in such clean and good condition, although in point of colouring they are perhaps not equal to those grown in the open.

In a box of Roses exhibited by Mr. George Mount of Canterbury were some remarkably fine Teas, amongst them Maréchal Niel, a beautiful flower of the Holmlea or Cooper strain, which has a peculiar intensity of colour; also a splendid bloom of The Bride, very pure and fine in form. He had also a box full of Catherine Mermets, exquisite both in colour and form, and suggesting how difficult it will be to excel these fine old flowers. I was peculiarly interested in this box, as I have had the opportunity of seeing Mr. Mount's flowers in their home at Canterbury. I saw where the blooms of Maréchal Niel had been gathered. On the roof of the house there were, when I saw it, between 3000 and 4000 buds in various stages. Mr. William Rumsey and Messrs. Paul & Son were also noteworthy exhibitors.

The futility of forecasting the character of the season, on the verge of which we are now standing, was never more apparent than in 1893. Our prospects were then of the most glowing character; the wood when ripened had sent out vigorous shoots, and many persons said we are to have a good Rose season at last. What disappointment ensued we all too well know, but certainly up to this time our prospects are good. Never was wood better ripened, and though in some places great injury has been done by the frost in January, yet in most gardens

Roses have passed through the winter without much injury; but all is uncertainty, and we must only hope that the good prospects of the present may be realised.—D., Deal.

A RETIRED GARDENER'S HOME.

STANLEY VALE, Wylam-on-Tyne, is the residence of Mr. George Cook, one of the best known gardeners in the north of England. He retired here about sixteen years ago, after being many years head gardener at Holeyn Hall, which was figured some years ago in the *Journal of Horticulture*. Mr. Cook will always be remembered as a great exhibitor of fruit and Roses in all the northern shows, and the international exhibitions as well.

Stanley Vale is now a charming place, unique in the arrangement of the grounds. The owner was fortunate in purchasing about 2 acres of land, encircled by a burn, which divides Northumberland from Durham. The burn Mr. Cook has made the most of from a landscape point of view. A very pretty artificial waterfall has been made, which looks as natural as possible. A large commodious double-fronted brick villa he has built, facing due south, where one can dwell on the most beautiful scenery, including hills and woods, rising behind each other as far as the eye can rest on the horizon. The position is most picturesque, and in the fall of evening, with the sun setting in the west, gives a most radiant and effective sight.

A bold rockery, on the declivity of a hill, constitutes one of the most salient features, which add so much to the charm of the place. This rockwork is rich in treasures of alpine and herbaceous plants, and in a short time will be very gay. At the time of my visit *Gaultheria procumbens* was pretty with its berries, also *Anemone pulsatilla*. Several *Aubrietia* seedlings were also in bloom, while here and there were studded *Thujopsis dolabrata*, and for colour the pretty *Retinospora tetragonia aurea* was most effective.

A small kitchen garden is studded with perfect specimens of Apple trees on the Paradise stock. The trees are about sixteen years old and 5 feet high, one mass of fruit buds. Mr. G. Cook, from long experience, is a stern advocate of root-pruning and summer pinching. The splendid trees are examples of the very highest culture. The glass structures consist of a large vinery and greenhouse.

In the evening of Mr. G. Cook's life it is pleasant to record that he is so comfortable. He enjoys a chat, and is glad to see any horticultural friend, and to show his many valuable floral treasures. It is to be hoped he will be spared many years to enjoy his peaceful home, in the serene and happy manner which forms such component part of his nature.—BERNARD COWAN, F.R.H.S.

FLOWERS AT HOLLOWAY.

PERHAPS at no better time of the year can a visit to Messrs. B. S. Williams & Son's, Upper Holloway, be paid than during the late spring and early summer months. Then it is that plants are showing flowers after a period covered more or less by inactivity, and nowhere is one likely to see a more varied and interesting collection. Had the visit, which was the initial one of the writer, been paid a few weeks earlier, the handsome Hyacinths and Tulips which made such a fine display at the Crystal Palace Show would doubtless have been seen. But though these were passed there still remained many other flowers equally worthy of notice, such for instance as *Clivias*, *Amaryllises* and *Orchids*. Mention will therefore be made of these, also of others; but readers of the *Journal* would do well to go to Holloway and judge for themselves as to the quality, beauty and utility of the plants at present to be seen in such numbers.

In commencing with the *Amaryllises*, a word in praise of the firm's assistance in introducing new forms, results both of its own cross fertilisation and of continental raisers of repute, may well be accorded. As evidence of the onward march Holloway Belle may with safety be instanced. It is really a handsome form with brightly coloured flowers. Down the centre of each segment, which is broadly margined with bright red, is a strip of white, the combination being a most striking one. Doubtless many readers would notice that it was adjudged an award of merit at the last meeting of the Royal Horticultural Society. Lord Salisbury is a variety with bold blooms of a peculiar purplish red colour; and Emperor Frederick with its large, shapely crimson scarlet flowers is certainly amongst the best. *Macranthon*, too, was very noticeable, the dark crimson red blooms being most distinct. It is above the average size, and almost faultless in shape. An unnamed seedling of a white and rose colour cannot fail to attract attention and demand admiration. It is one of Messrs. Williams' own raising, and the soft delicacy of colouration and the charming contour of the flower make it tolerably safe to predict a great future for this variety. Other prominent kinds were *Ariadne*, white and red; *Lady Ardilaun*, rose and white, very delicate and pleasing; *Distinction*, bright red; and Mr. C. Welford, striped red and white.

Let us now turn to the *Clivias*. These are now forming a splendid display, and as there are still numbers of plants not yet showing for flower, *Clivias* are likely to be seen in good condition by visitors to Holloway for some time to come. A dark form with medium-sized flowers is found in *Cruenta*, the colour of which is deep orange red. Holloway Beauty is a grand acquisition, with shapely trusses of broad orange scarlet flowers, to which an additional charm is lent by the soft lemon-coloured throat. The truss of *Meteor* is one of the most compact

and shapely of any. The colour of the flowers is a bright orange red, and it may be called one of the best. For a paler coloured form Baroness Schröder is splendid. The colour may be termed a rosy-orange. *Atrosanguinea*, *robusta*, *Aurantiaca*, and others are also of a high order of merit.

Amongst the Orchids, which form the most diversified display just now, numerous varieties, each claiming some especial merit, were noted, but of all these mention cannot be made. First and foremost may be mentioned the *Vandas*, amongst which the following were blooming—*tricolor suavis*, and *tricolor insignis*. These are superb, the flowers being of good form and perfect colouration; the leafage, too, denoting health, vigour, and skilful attention. *Lycaste Skinneri*, of which there are numbers of plants, was carrying some handsome flowers, as also were specimens of *Cattleya Lawrenciana*. The *Cymbidiums* are throwing spikes of bloom of exceptional length, which will, when fully developed, prove a grand sight. *C. eburneum*, with its sweetly scented flowers, was also noticeable. A fine plant of *Chysis bractescens* is worthy of more than a passing glance, as also is a specimen of *Odontoglossum Edwardsi*, carrying an enormous spike of bloom. *O. gloriosum*, triumphans, and fine forms of *Pescatorei* and *Alexandrae* were also prominent. *Cypripediums* were splendidly represented by *vexillarium superbum*, *Morganiae*, *selligerum majus*, *Schröderae*, *Exul*, and *Pitcherianum*, *Williams' variety*; whilst amongst the *Dendrobiums* were seen *chysodiscus* and *Venus*. A group of plants of *Ada aurantiaca* formed a striking feature.

Rhododendron Williamsi was to be seen in great numbers. It is a most useful, extremely floriferous variety, with compact trusses of nearly pure white flowers. *Azaleas* were flowering with the utmost freedom, and forming a bright display. Foliage plants were very numerous, included *Palms* in great variety, *Crotons*, *Aralias*, and *Ferns*.—NOMAD.

PRIMULA OBCONICA.

It may not be generally known the great amount of risk that gardeners and others run in the cultivation of this *Primula*, and those who are in the habit of handling the flowers will perhaps be interested in the following remarks which I received from a medical gentleman the other day. Some years ago he prescribed for a lady who was suffering from a severe irritation about the face and neck, and found that she was very fond of *Primula obconica*, and in the habit of wearing it as a spray.

He did not attach much importance to that case, but in August, 1892, he was consulted by a young man who is an assistant in a nobleman's garden in Staffordshire. The young man informed him that in the first place he perceived an eruption and irritation between the first two fingers of his right hand, which gradually increased, affected his arms, and produced a peculiar sensation of creeping throughout his system after retiring to bed. The medical man treated him for blood poisoning, but as time advanced he became gradually worse, although the general health was maintained fairly well. Amongst the various plants of which the young man had charge was *Primula obconica*, this being grown to a large extent. He was informed by a friend that this plant was the cause of his blood poisoning some twelve months after he was first attacked, which explained the cause of no actual progress being made in removing the intense irritation and eruption which by this time had extended nearly all over the surface of his body, while his face and hands excited pity and sympathy.

During the twelve months that had intervened he was constantly connected with the *Primulas*, but on being informed that they were the cause of his disease, he found means of removing them from his charge. As soon as the source of the mischief was removed signs of renewed health and freedom commenced to assert themselves; and, aided by the medical treatment undergone, the disease slowly died away, and though the young man is not yet in perfect health, he is now on a fair way for recovery. After passing about twelve months of intense suffering, the fact that his commencement to get well dated from the time that the plants were removed is in itself sufficient to prove that they were the cause of the disease, and also prevented his recovery.—G. H., *Alton Towers*.

[Similar testimony to the above was published in the *Journal of Horticulture* a few years ago, though many growers of the plants have not found injurious effects resulting.]

OUTDOOR CAMELLIAS AT ST. LEONARDS' HILL.

ANYONE interested in the hardiness of the *Camellia* could not do better than to pay a visit to St. Leonard's Hill, near Windsor, the seat of F. J. Barry, Esq., M.P. After a drive of two miles or so from the town one enters the park gates, ascending through woods with an occasional break of pasture to the high elevation on which the house stands, the terrace being on the level of the top of Windsor Castle Round Tower. Here a grand view of the surrounding country is obtained, and much has apparently been done by introducing *Coniferæ* with other trees and shrubs of various kinds.

The *Camellias* are in various positions, north, east, south and west, many of them having been planted nine or ten years, and two very large plants for a much longer period. They were, at the time of my visit, entirely covered with blooms and a host of buds yet to expand; some varieties being completely weighed down with blooms

and buds. The plants were as green and as vigorous as any of the surrounding Laurels. Mr. Brown, the head gardener, informed me they had stood without any protection; and although Laurels had been cut down during some of the past winters no harm seemed to be done to the *Camellias*. One large plant of *Imbricata* standing on the open lawn has been a grand sight. The *Camellias* are planted in a clayey loam with an opening mixture of leaf mould and other materials, the majority of the plants being from 4 to 8 feet high, well clothed to the ground with foliage. There is not any bud-dropping, such as one generally finds when *Camellias* are growing indoors.

Many of the *Coniferæ* on the lawns are developing into excellent specimens, the soil, with the liberal treatment accorded them, being adapted to their requirements. The other departments of the garden are in good keeping, and Mr. Brown is an expert in the art of bee-keeping.—A. S.

ROYAL HORTICULTURAL SOCIETY.

APRIL 10TH.

SCIENTIFIC COMMITTEE.—Rev. C. Wolley Dod in the chair. Present: Messrs. Michael, Cheshire, Wilks, Wilson, Professor Farmer, Dr. Hugo Müller, and Dr. Masters.

The Late Mr. Jenner Weir.—Dr. Masters announced the receipt of a letter in reply to the letter of condolence addressed to Mrs. Weir and her family. In the reply allusion was made to the keen interest taken by Mr. Jenner Weir in everything relating to gardening, and to the fact that "his honourable connection with the Scientific Committee of the Society will be one of the treasured memories of his widow and children." The letter was ordered to be inserted on the minutes.

Saxifraga luteo-purpurea, hort.—A conversation took place as to the correct name and position of this plant which was considered to be a hybrid. Dr. Masters announced that he was in correspondence about the plant with Professor Engler of Berlin, the monographer of the genus.

Leafy Shoot from the Base of an Orchid Tuber.—A specimen of the tuber of some terrestrial Orchid was shown in which a leafy shoot was produced from the base. The specimen was referred to Professor Farmer.

What a Daffodil can do.—Mr. E. H. Jenkins sent a specimen with the following communication:—

"Among some Daffodils that were flowered in the greenhouse in February, 1893, some few pots had become mixed. When flowering was complete these were set aside by themselves, and when the foliage had died away were shaken out of the soil. The few mixed ones were put aside for discarding, and were not troubled about afterwards; therefore from July, 1893, to April 5th, 1894, these few bulbs have been in an otherwise empty flower-pot, and the one enclosed was on the top. Without a particle of soil, fully exposed to the variations of weather and so forth, and without even producing a vestige of root, this bulb is doing its best to produce the flower that it contained. I have heard people talk of Daffodils when forced going blind; but I have more than once stated, what the enclosed bulb seems to me to fully demonstrate, that if a flower bud is once formed within the bulb, it will come forth in some form or other, provided always, of course, that the bulbs are free of maggot. The variety enclosed is *Rugilobus*, which in the open beds were fully developed a week ago, so that the coming of its flower differs but little from bulbs planted in due season."

Süntără Oranges.—Dr. Bonavia sent specimens, together with the following communication:—

"There is at present in the London shops a loose-skinned Orange from India, that commonly known there as the *Süntără Orange*, of which there are many varieties. The *Süntără Orange* is the *Citrus aurantium sinense* of Rumphius, while the Valencia Orange or Portugal Orange, of which also there are many varieties, is the *Citrus aurantium sinense* of Galesio. The Mandarin or Tangerine Orange is a sub-section of the *Süntără* type, and is a different thing from the latter. In a Piccadilly shop the *Süntără Orange* has been rightly ticketed as an Indian Orange; but in a Bond Street shop they ticketed it as Mandarin Orange from South Australia. This is manifestly erroneous. The Australian seasons are just the opposite of our seasons. Their spring is in September, and their Oranges do not ripen till July. So that these *Süntără* could not have come from Australia. The *Süntără Oranges* in Ceylon are called Mandarins by the English. Oranges may be thus classed:—1, Cling-skinned, including *Citrus aurantium sinense* of Galesio, Portugal Orange, St. Michaels, Blood Orange, Jaffa Orange, Navel Orange, Florida Orange, and many others. 2, Free-skinned, *Citrus aurantium sinensis* of Rumphius, *Süntără Orange* of India, of which there are numerous varieties. The Mandarin (*Citrus nobilis* of Loureiro (?)) I consider a sub-section of the *Süntără* type, but as different from it as any two distinct varieties of Apple or Pear. See pp. 44 and 53, and pl. cviii. of *Oranges and Lemons of India and Ceylon*. G. Bonavia."

The Bermuda Juniper.—Dr. Masters made some comments on fresh specimens received from Bermuda through the kindness of Arthur Haycock, Esq. The history of this tree is given in the "Gardeners' Chronicle" for May 26th, 1883, by Mr. W. B. Hemsley. *Juniperus bermudiana* is the only tree of any size in the island, where it is still abundant. It is quite distinct from the "Red Cedar" (*Juniperus virginiana*) of the United States, though it may have descended from a common ancestor. The wood, a specimen of which was also exhibited, is very like that of the Virginian Juniper, and is used for constructional

purposes, being hard and durable. The special interest attaching to the tree is the fact that it is peculiar to the island, and the questions naturally arise whether it originated there spontaneously, a hypothesis now considered untenable, or whether it was imported, and if so, from whence? In any case there is evidence of its presence ages before the present time in soil now much below the surface of the sea. The most probable explanation of its presence in these coral islands is that fruits of the Virginian Juniper were introduced by birds from the continent to the island, and that in course of time the species has varied so greatly, owing to local conditions, that it is now so different from its ancestral state as to warrant being placed in a separate species.

Variation in Narcissus.—Mr. Wolley Dod showed leaves of *Narcissus incomparabilis* marked with longitudinal stripes of yellow. The condition was common this year, and independent of variations in soil. Mr. Wilks had met with the same experience.

MARIANTHUS DRUMMONDIANUS.

ALTHOUGH nearly three decades have passed away since this charming little blue-flowered plant was introduced to public notice, it is as yet unknown to many cultivators. It is a slender and graceful twining plant, as depicted in the illustration (fig. 51). We have seen a specimen flowered extremely well in one of the houses at the Crystal Palace under the management of Mr. W. G. Head, and the freedom with which it produced its flowers, and the long period during which they lasted, amply proved the value of the plant. It succeeds in a compost of light loam, peat, and sand, in a greenhouse or any other cool structure.

THE JAFFA ORANGE.

OF the history of this Orange apparently very little is known. It is an egg-shaped Orange, of large size, and a recent introduction to this country, where it is esteemed as a dessert fruit chiefly on account of its size, colour, and uncommon shape. It is called the Jaffa Orange because, so far, it is received only from Jaffa, where, however, other varieties of Oranges are grown, but perhaps not so largely exported as the egg-shaped sort. Evidently a similar Orange is known in Malta. In a Report on the Fruits of Malta, prepared by the late Dr. Gulia, Director of the Botanic Garden ("Kew Bulletin," 1888, p. 237), amongst the Sweet Oranges grown in the island is a variety described as follows:—

"The egg-shaped or oblong Orange (*Laring tauuali*) forms a very lucrative production for the Maltese gardener. The fruit is large, oblong, rind thickish, pulp containing an agreeable juice, seeds few. It is the most perfect of our Oranges, and really forms a handsome dessert fruit. It is extensively grown for export and sold from 4d. to 1s 3d. per dozen." According to the "Histoire et Culture des Orangers," par A. Risso et A. Poiteau, Paris, ed. 1872 (Du Breuil), this egg-shaped Orange is apparently not known in Southern Europe, or at least it is not figured in this important work amongst the cultivated Oranges of that part of the world. In Sicily, "Oranges of two kinds are described, the oval and the round. The trees that bear the oval fruit are preferred. . . . The oval Oranges are in demand in commerce, being more durable." In the U.S. Consular Reports, No. 41½, June, 1884, pp. 760, 761, it is mentioned that the Oranges in Syria "are distinguished by their shape and contour: *Belady*, round, flat ends, very thick peel, hardy; ripens late. *Shamonty*, long like an egg, thin-skinned; ripens early. *Bisry*, finest flavour; a seedling. All these, except the last, are grafted upon the Wild or Bitter Orange. . . . Only one variety [the *Bisry*] grows directly from seed."

Judging by the brief particulars here given, the *Shamonty* appears to come nearest to the Jaffa Orange as known in this country.

The Maltese oval Orange, already regarded as probably identical with the egg-shaped "Jaffa" Orange, has been introduced to Florida. In a report on the condition of "Tropical and Sub-Tropical Fruits in the United States in 1887," U.S. Department of Agriculture, Washington, 1888, p. 66, the following particulars are given:—

"*Maltese Oval.*—From the Mediterranean. Imported by General Sandford. Thornless, rapid grower, very prolific; fruit oval in shape, and of a beautiful orange colour, medium in size, and bears transportation unusually well. Of some twenty boxes shipped to England last winter there were only ten Oranges spoiled on arrival in the lot. This variety is a special favourite in the London market. It is probably more largely planted in Orange County [Florida] than any other kind."

A Maltese "oval" Orange is enumerated amongst the fruits cultivated in South Australia. Again, a "St. Michael's egg" Orange grown in Florida evidently approaches the "Maltese oval" in character. It is described as follows:—"Large, oval; thick skinned; juicy, but not rich; quality fair. Tree prolific; few thorns." U.S. Department of Agriculture, Report l.c., p. 71.

The Jaffa Orange has been largely imported into the United Kingdom during the last ten years, and "in colour, shape, and flavour it is a most attractive fruit." In a Foreign Office Consular Report (1884, p. 1433) it is stated that "Perhaps in no part of the world is the Orange grown to greater perfection than in the orchards of Jaffa." In 1883 there were exported to the United Kingdom 11,278 boxes of Jaffa Oranges. Since that time the trade has considerably increased, and at the present time he exports have reached 36,000 boxes.

The influence of this increased activity in fruit growing at Jaffa has brought to it a remarkable prosperity. In a Foreign Office Report (Miscellaneous Series, 1893, No. 300) "On Irrigation and Orange Growing at Jaffa," the following particulars are given:—

"Jaffa, the chief town of the Caza of that name, owes its importance to its climate, which is extremely favourable for Orange growing. As a natural consequence this seaport is surrounded on the land side by Orange groves, covering an area of some 720 hectares (about 1780 acres). Jaffa Oranges, thanks to their excellent flavour, have of late years acquired a world-wide reputation, and while some eighteen years ago this fruit was known only to Beyrout, Alexandria, and Constantinople, enormous quantities of it are now exported to Europe, America, and even to India, and its cultivation has consequently increased to a very considerable extent. A special feature of Jaffa Oranges is that they will



FIG. 51.—MARIANTHUS DRUMMONDIANUS.

keep from thirty days to forty days, and, if properly packed, for two months, and even three months. New Orange groves are continually being laid out, and now number some 400, against 200 some fifteen years ago. This, again, has influenced the population of Jaffa, which now contains 42,000 inhabitants, against 15,000 inhabitants some twelve years ago. The revenues have doubled, and the vicinity of the custom house is crowded with piles of cases of Oranges waiting for shipment to all parts of the world. The Imperial Ottoman Government, with a view to encourage the export of Oranges, levies an export duty of only 1 per cent. on them, and the exports for the last few years have averaged 36,000 boxes per annum. Owing principally to the trade in Oranges, Jaffa now ranks next after Beyrout in importance among Syrian coast towns."

"Orange growing in Syria is conducted exclusively by natives. Each Orange garden contains some 2000 square feet of planted area, equal to about 1300 trees to the hectare (= 2 471143 acres). The trees begin to bear the fourth year after planting, but it is estimated that it takes seven years, and sometimes eight years, before an Orange orchard yields a remunerative crop. During all this time, and even afterwards, the orchards have to be watered continually, and this irrigation is the most difficult and the most laborious part of the work in con-

nection with Orange growing, inasmuch as the water has to be drawn by means of more or less primitive water wheels from wells dug in the gardens 90 feet, or even sometimes 100 feet deep."—"Kew Bulletin.")

LIVERPOOL NOTES.

FRUIT PROSPECTS AND THE WEATHER.

RARELY if ever has there ever been such a wealth of blossom as we are having this season. The country is a perfect sheet of pink and white. Damsons, Plums, Cherries, and Pears being full out, whilst the Apples are fast unfolding. Orchards attached to farmhouses are particularly beautiful, and stand out as a lesson to those who have rooted out many old trees and failed to plant young ones. At no period in the history of fruit cultivation was there ever such facility, either in obtaining a knowledge of planting or suitable varieties, as we have at the present time, and it is a pity that farmers' orchards are not made to yield profit as well as pleasure.

A SUCCESSFUL AMATEUR.

Amateur as well as professional gardeners always receive attention in the pages of the *Journal of Horticulture*, and it affords me much pleasure to record the successes of a near neighbour of mine, Mr. T. Forrester of Huyton, who is a reader of your paper, and no doubt much of the knowledge he possesses has been gained from its pages. Some fifteen months ago Mr. Forrester erected a small span-roofed house and purchased a few Tea Roses in pots, which grew admirably. After the Roses had finished blooming, a bed was made on each side of the house and planted with Tomatoes, and by the time they had reached the glass the Roses were ready to be transferred outside. Grown on single stems the Tomatoes did remarkably well, and the following is a list of successes at various exhibitions. Out of great competition at Prescott Show in July last he won in classes for three dishes (open) and in the cottagers' class. At Huyton for similar classes, and at the Liverpool summer Show for three dishes (open) and two dishes (cottagers). At present there is again a wealth of Tea Roses, and outside Roses, Carnations, and herbaceous plants will make a grand display. He is an enthusiastic amateur, and his successes deserve to be recorded.

THE VALUE OF ROOT-PRUNING.

The value of root-pruning was never better exemplified than in the garden of another enthusiastic amateur fruit grower, viz., Mr. McMullen, Huyton, where a fine and now fruitful Jargonelle Pear tree may be seen. Planted forty-one years ago, it was practically fruitless and blossomless for eighteen years. For the next three years it flowered little, but bore no fruit. Then followed a small crop for five years in succession, though scarcely any up to 1882, when the above named gentleman came in possession of the garden. The tree was doomed, but he gave way to practical advice, and resorted to the operation of root-pruning. A trench was taken out 18 inches wide and some 6 feet from the stem of the tree, the thick roots being cut carefully through, and the fibry ones left and brought nearer the surface. When deep enough the surface soil was removed right to the tree stem and left in the trench below. Then twelve barrowloads of good decayed horse manure were spread over the roots and covered with soil, a good watering completing the operation. The next season he had a fair crop of fruit, and Mushrooms in abundance from under the tree. Since then the Pear crop has increased enormously; in 1892 he gathered over 4000 fruits of the highest quality, and last year 6700. Some good manure is spread over the roots both winter and summer. The tree is never pruned now, the crop it carries keeping it within bounds. Occasional supplies of liquid manure are given, and the tree at present stands loaded with blossom, a fitting example of the benefit of judicious root-pruning.—R. P. R.

ROYAL BOTANIC SOCIETY.

APRIL 18TH.

THE second Exhibition of spring flowers was held at the gardens of the above Society, Regent's Park, on April 18th, and in some respects eclipsed all previous shows at this period of the year. Generally the competitive classes were well filled, and the exhibits made a beautiful display, the Azaleas and Roses being particularly fine. Orchids and hardy flowers were also well represented, the same applying to miscellaneous groups of plants. Among the latter were some unusually profusely bloomed hardwooded plants, which formed quite a feature of the Show.

For six greenhouse Azaleas, Mr. H. Eason, gardener to B. Noakes, Esq., Hope Cottage, Highgate, secured the first prize, exhibiting well-flowered specimens. The second award went to Mr. R. Scott, gardener to Miss Foster, The Holme, Regent's Park, for half a dozen good examples; Mr. H. James, Castle Nursery, West Norwood, being third. Spiræas were good, and here Mr. Scott won, staging six plants of *S. japonica*. Mr. W. Kemp, Blandford Nurseries, Teddington, was second, the third prize going to Mr. Alexander, Upper Teddington. Mr. Scott also secured premier honours for six *Clivias*. Tuberos *Begonias* were well shown by Mr. T. S. Ware, Hale Farm, Nurseries, Tottenham, to whom the first prize was awarded, a similar honour going to Mr. John Odell, Gould's Green, Hillingdon, for nine *Pelargoniums*. The class for twelve plants of *Dielytra spectabilis* brought forth two competitors, these being Mr. W. Kemp, Teddington, and Mr. R. Scott, to whom the first and second prizes were adjudged respectively. Mr. J.

Douglas, Great Gearies, Ilford, won with nine *Cinerarias*, staging well grown plants beautifully flowered. All these plants were named, and the flowers were noteworthy for their brilliant colours.

As already hinted, hardy flowers made a grand display. Messrs. Paul & Sons, The Old Nurseries, Cheshunt, won the first prize for a collection of Alpines, amongst which *Cheiranthus alpinus*, *Gentians*, *Aubrietias*, and *Alpine Phloxes* were conspicuous. The same exhibitors were placed second for a collection of hardy herbaceous plants, the first prize being taken by Mr. T. S. Ware, who had an interesting exhibit. Mr. J. Douglas staged the best dozen plants of *Primula Sieboldi*, and also won with a similar number of other hardy *Primulas*. The second award for *Primula Sieboldi* went to Mr. T. S. Ware, whose plants were grown in pans. For twelve Alpine, and the same number of Show *Auriculas* and *Polyanthuses*, Mr. Douglas was again to the front, being followed in each class by Mr. A. J. Sanders, gardener to Viscountess Chewton, Bookham Lodge, Cobham. Mr. W. L. Walker, Reading, was third with *Alpine Auriculas*. Mr. C. Turner, Slough, sent a collection of *Auriculas* not for competition.

Roses were very fine, both in the competitive and miscellaneous classes. In the former Messrs. Paul & Son won with six plants in pots, Mr. Rumsey being second, and Mr. J. Perry, gardener to J. C. Tasker, Esq., Middleton Hall, Brentwood, third. Messrs. W. Paul & Sons, Waltham Cross, sent a grand group of Roses in pots and cut blooms, including a box of *Maréchal Niel*, *Corinna*, and *Medea* (large silver medal). Mr. Perry likewise exhibited a collection, and a bronze medal was recommended. Mr. J. Walker, Thame, Oxon, had cut blooms of *Maréchal Niel* and *Niphetos* in splendid condition (bronze medal). Mr. W. Rumsey, Waltham Cross, contributed a large group of Hybrid Perpetual and other Roses in pots, also cut blooms (large silver medal). Messrs. Paul & Sons, Cheshunt, showed a collection of Roses, and a large silver medal was recommended. Mr. Frank Cant, Colchester, contributed five boxes of cut Roses, these being bright and fresh, worthy of the large bronze medal awarded.

The other miscellaneous exhibits included a small group of new and rare plants from Messrs. J. Veitch & Sons, Royal Exotic Nurseries, Chelsea. Among these were *Amaryllises*, *Phyllocactus alatus*, *Lælio-Cattleya Pallas*, *Rhododendron Scarlet Crown*, and some well-coloured *Caladiums*. Messrs. Veitch & Sons also sent *Magnolia conspicua Soulangeana nigra*, a dark coloured form; and other hardy shrubs (bronze medal). Mr. C. Turner, Slough, had a small group of *Azaleas* (bronze medal), and Messrs. Barr & Sons, King Street, Covent Garden, a collection of *Daffodils* and *Tulips* (small silver medal). Messrs. B. S. Williams & Sons, Upper Holloway, exhibited *Clivias*, *Amaryllis*, and *Rhododendrons* in variety, for which a silver medal was recommended. Messrs. Balchin & Sons, Hassock Nurseries, Sussex, sent a hamper of *Boronia serrulata*, and Messrs. Paul & Sons a selection of dwarf *Cannas* (bronze medal). Mr. Arthur Knowles, Horsell Birch Nursery, Woking, staged *Daphne cneorum major*, a dwarf growing form. Messrs. J. Laing & Son, Forest Hill, had a large group of miscellaneous plants tastefully arranged (large silver medal). Messrs. W. Cutbush & Sons, Highgate, were recommended a silver medal for *Azaleas* and other plants, as were Messrs. Hugh Low & Sons for an attractive group of hardwooded plants. Messrs. W. L. Lewis & Co., Southgate, sent a group of *Orchids* (bronze medal), while Mr. G. May, Upper Teddington, and Mr. J. Pike, Acton, had plants and flowers of *Carnation Uriah Pike*, a very dark-coloured and clove-scented variety.

Messrs. Laxton Bros., Bedford, staged plants carrying fruit of their Strawberry Royal Sovereign. The fruits were of an enormous size and well coloured, deserving the certificate of merit awarded. Other plants were also certificated, but the adjudicators had not completed their work when our reporter left the exhibition.



FRUIT FORCING.

Vines.—*Early Forced House.*—If the Vines are infested with red spider give a timely sponging of the leaves with a sponge moistened in a solution of soft soap, 2 ozs. to a gallon of hot water, and used in a tepid state. This is a rather tedious process, yet it is the safest and best remedy. Syringing, even between the bunches, with the clearest water spoils the appearance of the Grapes for market purposes, and employing sulphur on the hot-water pipes is sometimes attended with serious discolouration in white Grapes. Afford a thorough supply of water to the inside border, applying it early in the day, so that surplus moisture may pass off before closing time. A light mulch of dry material will prevent moisture arising prejudicial to the Grapes, but we use rather fresh, yet well sweetened, short litter from the stables, and it prevents the soil cracking and encourages surface roots. Early Grapes do not always colour well, the defect chiefly arising from overcropping or continued hard forcing and attacks of red spider; it is only avoided by moderate cropping, rational treatment, and cleanly culture. A constant supply of rather dry warm air and a low night temperature will do much to assist heavily cropped Vines in colouring the Grapes.

Where the Grapes are fully ripe a reduction in temperature is advisable, but a temperature of 60° is essential to the after welfare of the Vines, and moderate moisture should be maintained for the benefit of the foliage. The moisture will not do the Grapes any harm, provided free ventilation is given.

Succession Houses.—The stopping and tying of the shoots must have attention. Where the space is restricted, stop the shoots two joints beyond the fruit, and as foliage is necessary to sustain root activity, leave the laterals on the shoot both above and below the bunch, or at least those from the two lowermost eyes, and those level with and above the bunch. Pinch these at the first joint, especially those from the basal leaves, also those above, unless there is space for extending the laterals, when they may be allowed to make two or three leaves, but no more growth must be encouraged than can have full exposure to light and air. After the space is fairly furnished keep the growth closely pinched to one joint as made. The great evil in Grape growing is overcrowding, which deprives the foliage of light and air; and restricting the growths is intended to avoid that and secure thoroughly solidified wood as it is made.

Tying Down.—It is a good plan to have the rods somewhat lower than the trellis, so that the side shoots have a slight incline upwards. In tying these in the places where they are to remain during the summer it is a common practice to begin to tie them down as soon as they are long enough to bend. This is not advisable unless as a precaution against injury from frost, as the shoots at this stage are so tender that the slightest twist the wrong way breaks them. It is a good method to defer tying down until the shoots are less sappy, which may be when the bunches are showing clear of the leaves. Sufficient space should be left in the ligatures for the swelling of the shoots. Stopping ought to commence when the leaf at the joint or place of pinching is the size of a halfpenny.

Vines in Flower.—Afford Muscats a free circulation of rather dry air, and a temperature of 80° to 85° or 90° by day from sun heat, 70° to 75° artificially, and 70° at night, falling 5° on cold nights. Raise the points of the bunches to the light, and liberate the pollen at midday by gently rapping the footstalks of the bunches, or go over the bunches carefully with a large sized camel's-hair brush, and afterwards dust them with another charged with Alicante pollen or that of some different and free-setting variety. Hamburgs set freely in a lower temperature, but they are better for a little assistance from fire heat, and other varieties are similarly aided during the flowering period.

Thinning Bunches and Berries.—It is advisable to make a selection of the best bunches, and leave only those required for the crop before they come into flower. This concentrates the forces on those retained, and by proper attention to fertilising the flowers a good set and finer bunches and berries are secured. Thinning the berries should commence as soon as they are set, especially in the case of the free-setting varieties, and where fine specimens are required for exhibition it should be attended to while they are in flower. With the shy setters thinning should be deferred until the properly fertilised berries can be distinguished by their taking the lead in swelling. Follow it up on dull days, or early and late in bright weather. Remove surplus bunches, under rather than overcropping the Vines, as too heavy cropping is fatal to colour and finish.

Feeding.—When the Vines are in full leaf and the Grapes swelling they require abundant supplies of nourishment. This may be given in liquid form; but it is not by any means the safest method, as an over-strong dose sometimes destroys the young fibrous roots. Shanking also often follows stuffing the soil with organic matter held in suspension. All the advertised fertilisers are excellent and handy. It is best to give the borders a thorough supply of water, then supply the fertiliser, and water in moderately. By this procedure there is no fear of losing any virtue the fertiliser contains; but when it is given on a dry border, and followed by a heavy watering, it is likely to be washed into the drainage, and roots be encouraged at the bottom of the border instead of near the surface. A light mulch of short manure will be of advantage in keeping the border uniformly moist.

Late Houses.—The Vines are making rapid progress. Disbud and tie out the growths as they require it. Close the house early in the afternoon with sun heat, and maintain plenty of atmospheric moisture by frequently damping the houses and syringing the Vines at closing time, but not after the bunches show. Late Hamburgs are starting naturally, and need only have a little fire heat to exclude frost.

Young Vines.—It will be necessary to afford a gentle fire heat in cold weather to keep the Vines in steady progress, otherwise they are best allowed to start naturally, and secure a short-jointed growth by free ventilation. Disbud, leaving the best shoots on both sides of the canes and alternately at about 18 inches distance apart. The canes will have been depressed so as to cause them to break regularly down to the basal buds, when they can be tied in position. Crop lightly, one or two bunches being the maximum on permanent Vines. Any super-numeraries planted to fruit early, and afterwards be cut out, may carry a bunch on each shoot; six or eight bunches, however, are as many as vigorous Vines can bring to perfection, and fewer should be left on weakly canes.

Planting Vines.—This is a good time for planting young canes. The borders may be partly within and partly outside, planting the Vines inside. For early forcing the borders are preferably inside, and internal borders only are best for Muscats. When the Vines are only required for producing summer Grapes the borders may be wholly outside. The border should be concreted at the bottom unless it has a substratum of

gravel or rock, proper drains and outlets being provided, and 1 foot thickness of rubble about the size of half bricks at bottom and getting lesser in size upwards to that of road mettle at top. It is best covered with a layer of old mortar rubbish, free from pieces of wood, about 3 inches in thickness. Thirty inches depth of border is ample. Good turfy loam taken from an old pasture about 3 inches thick, where the soil is of a friable nature, is the most suitable main ingredient for a Vine border. To this may be added a fifth part of old mortar rubbish, a tenth of wood ashes, and a similar proportion of charcoal. Well drained and fertile garden soil will grow good Grapes, mixing 3 cwt. of kainit and 5 cwt. of basic slag with 28 cubic yards of soil or border 30 feet by 10 feet and 2½ feet deep. Six feet width of borders will, however, be sufficient to commence with.

The Vines having been cut back in early winter and kept in a cool house will have the buds now grown to a length of a couple of inches. Turn them out of the pots, remove every particle of soil (preferably by washing), carefully preserving the fibres. Spread the roots out straight and flat, the soil of the border having been raised to the required level, covering the roots to the depth of 3 or 4 inches, working the soil well amongst them with the hand. Give a good supply of tepid water, and mulching with a little short litter. If the canes have been shortened it will not do to prune them now, but remove the buds from the upper portion down to where fresh growth is desired to push, and cut away the disbudded part when the Vines have made some leaves, as there is then no danger of bleeding. Sprinkle the Vines and bouse twice a day, but avoid a very close and saturated atmosphere. Temperatures 55° at night, 65° by day artificially, and 70° to 75° with sun are suitable. If the weather be bright and the panes of glass large, shade lightly from 9 A.M. to 2 P.M., when the house should be closed, damping all available surfaces. If the temperature run up to 85° or more it will be an advantage.

When the Vines commence growing give every encouragement, increasing the temperature to 60° to 65° at night, 70° to 75° by day, and 80° to 85° from sun heat. Young Vines of this year's raising may be turned out with the balls entire, or being in turves, which is the better plan, the soil should be well firmed about them, so as to secure a fibrous root formation, and the house be kept at the temperature last named.

THE KITCHEN GARDEN.

Cutting Asparagus.—Where the roots did not suffer badly from last summer's heat and drought the shoots are now coming up strongly and thickly, but in the case of those only just covered with soil, and not mulched in any way, the crops are anything but satisfactory. A good length of stalk is always desirable, and in order to have this without the point opening out unduly, the crowns ought to be covered with not less than 3 inches of fine light soil. Where large plants are grown singly, French fashion, the fine soil should be banked up over each, removing and replacing this each time the shoots are cut or twisted off at the crowns. If extra long blanched stems are wanted the crowns ought to be covered with 6 inches or more of the light soil. In no case should the shoots be cut recklessly. Many shoots are spoilt by careless men before they reach the surface, and the practice of baring the crowns, or of tracing the long shoots down to their base and then twisting them off, if tedious, is yet the safest and best. Remove all that are long enough, in order that no weakly shoots should develop at the expense of more desirable stronger growths later on. Go over the beds daily and sort out the shoots, instead of mixing them indiscriminately, and thereby lessening the value of the whole. On no account cut any shoots from beds that have not been formed more than two seasons. Let the plants have three clear seasons' growth, and then they will have become extra strong, producing fine shoots in abundance.

Globe Artichokes.—Old stools are pushing up far more growths than desirable. What is wanted are three or four extra strong shoots, as it is from these only that large succulent flower heads are obtained. Clear the soil from round them and thin out severely. Poverty at the roots is a frequent cause of an early failure of the crop, and if not already done the older clumps should have their roots bared somewhat to a distance of 18 inches or more of the crowns, and be then given a liberal top-dressing of good solid manure, returning the surface soil on to the top of it. Those only planted on heavily manured ground one or two seasons will not need this top-dressing of manure, but should yet be well mulched with strawy manure. It is not too late to form a fresh plantation—small or large, according to the requirements of the place. These young plants may probably give a few good late heads this season, and next year will, unless destroyed by frosts, produce a fine crop of extra fine heads. They ought to have heavily manured double dug ground. Bare some of the older clumps, and with a knife detach some of the best placed growths with a small portion of root attached. Repant in groups of three well clear of each other, arranging the s'ations not less than 3 feet apart each way.

Beet—From the middle to the end of April is a good time to sow Beet seed. If there is a difficulty in preventing grossness then defer sowing to the end of the month, or even a few days later, also avoid growing those varieties which have a tendency towards becoming coarse-rooted during the average season. The Turnip-rooted forms are much the quickest in attaining a serviceable size, and are also the best for dry, shallow soils. On heavy strong ground they usually become much too large for storing, and in this case should only be sown for affording early roots. Ground that was well manured for the preceding crop will usually be quite rich enough for Beet, and if well formed roots are desired bury manure deeply, if any is used. Open shallow drills 12 inches

apart for the early and short-topped varieties and 15 inches asunder for any that grow somewhat strong. Moisten these if the soil is dry, and sow the seed thinly.

Carrots.—These are apt to become too coarse and to crack badly when the seed is sown early. Now is a very good time to sow, and the ground should be prepared much as advised for Beet. Naturally the cleanest, best formed roots are had from a sandy, free working soil, and heavy, lumpy ground must be made as fine as possible before sowing the seed. In some cases it may even be necessary to cover the seed with sifted sandy soil from the frame ground. If the Carrot grub is apt to be troublesome dust dry wood ashes freely along the drills with the seed. The drill for the Nantes Horn or other good stump-rooted forms may be drawn 9 inches asunder and the rest 12 inches apart.

Salsafy, Scorzonera and Chicory.—In the two first instances clean, straight roots only are valued, and these will not be had if there is any solid manure within 1 foot of the surface. All succeed well under much the same treatment as answers well in the case of Beet and Carrots. Open the drills 12 inches apart, water if dry, and sow the seed thinly.

Potatoes and Brussels Sprouts.—If a breadth of ground has been set apart for the Brussels Sprouts there is no good reason why it should not be cropped with short-topped quick-growing Potatoes. Plant the latter in drills 3 feet asunder. After the Potatoes are moulded up will be quite soon enough to plant Brussels Sprouts between, and the lifting of the former crop can be completed before the ground is covered by leaves. Borecole and Autumn Giant Cauliflowers may also be planted between widely disposed rows of early Potatoes, but all Broccoli other than quite the earliest plant of Veitch's Autumn Protecting should be planted on a clear piece of firm ground, and not among Potatoes.

Peas.—Those sown early in the open and all planted out from pots and boxes have grown very satisfactorily this season. If during showery weather slugs are found to be eating the stems dust soot and lime freely along them both before and after moulding up. Also place stakes to them before the plants fall about the ground. Peas transplant readily during showery weather, and if the rows are patchy one row might be broken up and the rest made regular with the plants thus obtained. In some instances the rows of early plants are scarcely worth staking, and these should be allowed to trail and crop on the ground. According as the last sowing of successional and main crop varieties come through the ground sow more seed. From this date give the preference to robust mildew-resisting varieties, Ne Plus Ultra in particular being favoured. A deep rich root run is also desirable. The rows should be arranged quite as far apart as the known height of the variety sown, and the seed ought to be distributed thinly in wide drills, covering with not less than 3 inches of soil. More Broad Beans should also be sown, this time giving the preference to the true broad podded section. Spinach may be sown in drills midway between the rows of Peas as often as the latter are sown.

THE BEE-KEEPER.

APIARIAN NOTES.

PROFITABLE BEE-KEEPING—LARGE OR SMALL HIVES.

In keeping bees for profit both large and small hives have been praised as well as condemned by various writers. The late Mr. Pettigrew had sound ideas in advocating large hives. Small hives have entailed upon novices considerable expense and disappointment. First, in the early year the queen and her limited attendants are kept in a hive by far too small for the natural productiveness of the queen, hence the bees never attain that full numerical strength to be able to gather the enormous weight of honey they ought to do in times of a heavy but brief flow. Because of this restriction, too, in contracted hives, the bees are put to still greater disadvantages when the supers are put on above that unnecessary "queen excluder" zinc. The bees are hindered in their progress pushing through it, much time and energy are lost propolisising it, while the supers immediately above are darkened, and the ingathering is still much under that of the full strength hive with the free and unobstructed communication to the supers, and by the close crown freed from that unnecessary and obnoxious propolisising when no excluder is used. The purity of the supers alone ought to be sufficient to induce bee-keepers to adopt the full strength system of bee-keeping. It seems anomalous to see some persons advocating the doubling system of hives, yet they condemn prolific races of bees, and the hives that would bring up single colonies equal to doubled ones, and on the swarming principle treble.

During the coming summer bee-keepers will be studying their own interests by keeping their bees in hives of suitable dimensions for the full development of the egg-laying powers of the queens. Keep in view the times of the honey flow, and that generally it takes about six weeks for a full-sized swarm after being hived to be equal in strength to the stock live before it swarmed. At this stage, if honey is plentiful, swarming may be expected, or a change

of queens may take place. Also, a swarmed stock with its prime swarm gathers more honey of a superior quality than the stock would had it not swarmed. These are reliable facts, and worth remembering. Hives of the Lanarkshire type are easily regulated to the requirements of the bees. Some hives are not capable of being regulated, and a few of these are about half the size they should be for prolific queens.

With the exception of the 11th inst., which was warm and summer-like, the weather has been much colder since writing last. Bees are either solely confined to their hives, or in a blink of sunshine venture out, never to return. On the date mentioned they gathered a good deal of honey, and were humming loudly. Some of the hives appear quite full of bees. It is a critical time with them at present, for unless more genial weather sets in soon, or feeding is resorted to, brood drawing and egg-eating will take place. The strongest and best provisioned hives are liable to do that before weaker ones attempt it.

Several pounds of sugar go a long way to prevent brood drawing, and it is better to err on the safe side by giving abundance than to have the hives spoiled by neglecting them. The outlay of a few pence will keep the bees in a profitable and well-conditioned state, which should be the aim of every bee-keeper.—A LANARKSHIRE BEE-KEEPER.

TRADE CATALOGUES RECEIVED.

H. Cannell & Sons, Swanley, Kent.—*List of Potatoes for Planting.*
Crompton & Fawkes, Anchor Works, Chelmsford.—*Horticultural Buildings and Heating Apparatus.*
Hogg & Wood, Coldstream, N.B.—*Turnip Seeds.*
Toogood & Sons, Southampton.—*Farm Seeds.*
J. Veitch & Sons, Royal Exotic Nursery, Chelsea.—*General Plant Catalogue.*



*All correspondence should be directed either to "THE EDITOR" or to "THE PUBLISHER." Letters addressed to Dr. Hogg or members of the staff often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post, and we do not undertake to return rejected communications.

Tropaeolum Stanstead Beauty (*Inquirer*).—So far as we can see the flowers appear to be a rich maroon in colour, but the petals are so curled and shrivelled through being enclosed in dry paper—nothing to keep them fresh—that we can form no definite opinion on the character of the variety.

Pear Leaves Blistered (*J. F.*).—The leaves are attacked by the Pear-leaf blister mite (*Phytoptus pyri*), the female having deposited her eggs and given rise to the blisters, now appearing as reddish spots, each of which has a small central hole on the under side of the leaf. Syringe the tree or trees with a solution of softsoap, 2 ozs. to a gallon of water, adding a small wineglassful of petroleum to 4 gallons of the solution, and keep well mixed whilst being applied, one person syringing into the vessel while another whirls the tree through a fine rose. Only use moderately, yet damping all parts.

Raspberry Canes Injured (*H. N. P.*).—There is no disease in the Raspberry canes, nor are they infested by any kind of insect, in fact, we cannot discover anything of a parasitic nature in any of the specimens. The canes are, for the most part, dead and dry, and the few portions that contain sap are very feeble in the bud, and have the appearance of having been badly ripened. The damage may have been caused by frost, but the wood is not blackened, and it certainly would have been had the mischief been of recent date. It may, however, have occurred in early winter, and seems to have been caused by an overdose of some manurial application to the roots than of direct injury to the canes. We had a similar experience from using the drainings from a piggery, which consisted mainly of urine, and it was applied neat, instead of having been diluted with at least five times its bulk of water, as ordered. House sewage often produces similar results to those the canes present through an overdose, or its containing poisonous matter.

Vine Growths Dying (E. B.).—The shoots are affected by "browning," which is caused by a slime fungus (*Plasmodiophora vitis*, *Viala et Savv*). The only action likely to be any use is to cut away all the blackened parts and give the border a dressing of lime, employing about a bushel per rod. The lime is preferably air-slaked, that is, allowed to fall in a shed, but some consider chalk better and employ double the amount, placing it on the surface and pointing it in as deeply as the roots permit. The lime is best supplied in the autumn or spring, but it would be advisable to give your border a dressing at once, even if it caused some disturbance at the roots, but that should be avoided as much as possible. If the roots are very near the surface it would, perhaps, be best to apply the lime in liquid form, using 1 lb. of lime to 2 gallons of water, and 4 gallons of the lime water per square yard. We have notes on this affection of the Vine from Mr. G. Abbey for publication in a future issue.

Forced Strawberries Unsatisfactory (Straws).—The first early plants of Strawberries have not been satisfactory in many places this year. This was probably due to the runners being weaker and the growth not made sufficiently early to secure well formed crowns through the unusual heat and dryness of last summer. It is always a good plan to take runners for forcing from one-year-old plants, as they are early and vigorous, care being taken to only layer those from fruitful plants. The plants then have a better chance to make a good growth and mature the crowns before autumn than have weakly runners from older plants. It is an excellent plan to have a change of plants occasionally, as repeatedly growing runners from the same stock on the same ground may result in deterioration, this being more certain to occur in some soils than others. La Grosse Sucrée is unrivalled as a first early forcing variety, Vicomtesse Héricart de Thury being good, and Noble for successional forcing.

Destroying Woodlice (F. P. R.).—The most wholesale mode of riddance is to place some boiled Potato round the inside of the frame or pit on the surface, and cover with a little hay loosely. Do this as a bait for a couple of nights, and in the morning of the second night have some boiling water in a watering pot, and pour it through the spout on the hay around the sides of the pit or frame. This will not do any harm to the plants provided it is not used upon them, or even to their roots, unless used in excessive quantity. It may be necessary to repeat it in the course of a week, which the presence or otherwise of the pests will determine. Some baits formed by placing a boiled Potato wrapped loosely in a little hay in a small flower pot lying on its side near the haunts of the woodlice in the evening, and in the morning shaking the vermin into a bucket of scalding water from the hay in which they will be secreted after or still feeding on the Potato. This persisted in will eradicate them. A toad introduced will devour great numbers, and is an aid in the destruction of woodlice too seldom called into requisition.

Culture of *Justicia calytricha* (S. T. F.).—You are right, it is one of the most beautiful plants that can be grown for the decoration of the conservatory or intermediate structures from December until the end of March. The beautiful light feathery plumes of this plant last a long time, and after the first flowers fade a second crop is produced. This plant must be grown on from cuttings annually, for old plants seldom grow with such vigour or produce such large plumes of flowers as young plants. Old plants from their slow stunted growth often become a prey to scale, which is not the case where the plants are raised from cuttings every year, provided they are not grown too warm. Old plants that have flowered should be encouraged to grow in a warm house, for the sooner cuttings can be obtained the better. When strong cuttings have been produced they should be inserted singly in small pots, and if kept close in the propagating frame every one will root. They should be grown warm until they are established in 8-inch pots, and from this stage an intermediate temperature should be given them. After the middle of July they should be grown in cold frames.

Mildew on Roses in Conservatory (Reader).—Mildew is apt to prove destructive in injudiciously ventilated structures. It may often be checked or even prevented by attention to ventilation. Sulphur has proved the most reliable means of destroying the fungus. Flowers of sulphur dusted over the affected parts will destroy it, but as this may be inconvenient, boil 1 lb. of flowers of sulphur and 1 lb. of quicklime in 3 quarts of water in an earthen vessel for fifteen minutes, keeping constantly stirred while it is boiling; allow to settle, and pour off the clear liquid for use, keeping it in a well stoppered or corked bottle. A quarter of a pint of the lime and sulphur preparation should be added to 3 gallons of rain water, and the Roses infested with mildew syringed with it thoroughly so as to wet every part. Allow the foliage to become dry, and in the course of a day or two repeat the application. Two or three syringings will mostly eradicate the fungus. As a preventive the Roses may be occasionally syringed with a weak solution of softsoap, a couple of ounces to a three or four gallon watering pot of water, using it in a tepid state or 90°, thoroughly dissolved and mixed. Keep the roots moist, and take care that cold currents of air do not affect the plants.

Chrysanthemums for Large Blooms (Reader).—As you do not require the blooms for exhibition, yet wish to have them as large as possible, you may, if you do not desire to reduce the height of the plants, let them grow without stopping. Most varieties show the first bud in May, sooner or later, according to the condition of the plants and the weather. Of this bud you may take no notice, but allow the "breaks" from below it to extend. These generally show buds in

August, and may be set or "taken" from the 10th to the end of that month for having good blooms in November. If you take them as they come after the date first named, you will not err, as you do not wish to have all the blooms in condition on some particular day. We have no doubt that at the least ninety per cent. of the largest blooms exhibited are developed from crown buds; those, as a rule, from terminals losing in size, but many of them are attractive. All the best blooms of Elaine, which you specially mention, are from crown buds. If you do not possess Mr. E. Molyneux's book on Chrysanthemums you should obtain a copy and read it attentively. It will supply you with valuable information on various points in Chrysanthemum culture. A new edition, the eighth, is just published, and can be procured from this office, price 1s.; by post, 1s. 2d.

Names of Plants.—We only undertake to name species of plants, not varieties that have originated from seed and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in firm boxes. Slightly damp moss, soft green grass or leaves form the best packing, dry wool the worst. Not more than six specimens can be named at once, and the numbers should be visible without untying the ligatures, it being often difficult to separate them when the paper is damp. (H. T.).—1, *Acacia verticillata*; 2, *Boronia serrulata*. (J. C.).—1, *Odontoglossum maculatum*; 2, a fine form of *O. grande*. (Yorks).—1, *Adiantum cuneatum*; 2, *A. Williamsi*; 3, *Davallia canariense*. (M. H. S.).—*Amelanchier botryapium*. (S. K.).—*Anemone hortensis*. (J. J. W.).—1, *Eucalyptus globulus*; 2, Balm of Gilead (*Cedronella triphylla* syn. *Dracocephalum canariense*); 3, *Ribes aureum*; 4, *Forsythia intermedia*; 5, an *Amygdalus*, flowers shaken; 6, *Pyrus salicifolius*. (R. H. F.).—Narcissi are florists' flowers which we do not undertake to name. The Scilla is a variety of *S. peruviana*.

COVENT GARDEN MARKET.—APRIL 18TH.

NEW Grapes now taking place of old Grapes give us a better supply. Strawberries and Cucumbers, in steadily increasing supply, maintain their value.

FRUIT.

	s.	d.	s.	d.		s.	d.	s.	d.
Apples, per bushel	2	6	to 10	0	Lemons, case	10	0	to 15	0
„ Nova Scotia, barrel	12	0	24	0	Peaches, per doz.	0	0	0	0
Cobs	45	0	50	0	Plums, per half sieve	0	0	0	0
Grapes per lb.	1	6	4	0	St. Michael Pines, each	2	0	6	0
„ new, per lb.	3	6	5	0	Strawberries per lb.	1	6	3	0

VEGETABLES.

	s.	d.	s.	d.		s.	d.	s.	d.
Asparagus, per bundle ..	4	0	to 5	0	Mustard and Cress, punnet	0	2	to 0	0
Beans, Kidney, per lb. ..	0	6	1	0	Onions, bushel	3	6	4	0
Beet, Red, dozen	1	0	0	0	Parsley, dozen bunches ..	2	0	3	0
Carrots, bunch	0	3	0	4	Parsnips, dozen	1	0	0	0
„ new, bunch	0	9	1	0	Potatoes, per cwt.	2	0	4	6
Cauliflowers, dozen	1	6	3	0	Salsafy, bundle	1	0	1	5
Celery, bundle	1	0	1	3	Scorzonera, bundle	1	6	0	0
Coleworts, dozen bunches ..	2	0	4	0	Seakale, per basket	1	3	1	6
Cucumbers, dozen	1	6	3	0	Shallots, per lb.	0	3	0	0
Endive, dozen	1	3	1	6	Spinach, bushel	1	6	3	0
Herbs, bunch	0	3	0	0	Tomatoes, per lb.	0	6	0	0
Leeks, bunch	0	2	0	0	Turnips, bunch	0	3	0	9
Lettuce, dozen	0	9	1	0	„ new, bunch	0	8	0	10
Mushrooms, punnet	0	9	1	0					

AVERAGE WHOLESALE PRICES.—OUT FLOWERS.

Orchid Blooms in variety.							
	s.	d.	s.	d.		s.	d.
Arum Lilies, 12 blooms ..	1	6	to 3	0	Pelargoniums, 12 bunches	6	0
Azalea, dozen sprays ..	0	4	0	9	Pelargoniums, scarlet, doz.	4	0
Bouvardias, bunch	0	6	1	0	bunches	0	6
Camellias, dozen blooms ..	0	9	2	0	Primula (double), dozen	0	6
Caruations, 12 blooms ..	1	6	3	0	sprays	0	6
Daffodil or Lent Lily ..	1	6	2	0	Primroses, doz. bunches ..	1	0
„ single	2	0	6	0	Pyrethrum, dozen bunches	2	0
Eucharis, dozen	2	0	4	0	Roses (indoor), dozen ..	1	0
Gardenias, per dozen ..	2	0	4	0	„ Tea, white, dozen ..	1	0
Hyacinths, dozen spikes ..	0	6	0	9	„ Yellow, dozen	2	0
Lilac (Freuch) per bunch	2	6	4	0	Roses (French), per dozen	3	0
Lilies of the Valley, dozen	0	6	1	0	Roses, Safrano (English),	1	6
sprays	0	6	1	0	per dozen	0	6
Lilium longiflorum, per doz.	2	0	4	0	Roses, Maréchal Niel, per	1	6
Maidenhair Fern, dozen	4	0	6	0	dozen	0	6
bunches	4	0	6	0	Tuberose, 12 blooms ..	0	6
Marguerites, 12 bunches ..	2	0	4	0	Tulips, dozen blooms ..	0	3
Mignonette, 12 bunches ..	3	0	6	0	Violets, Parme (French),	2	0
Myosotis or Forget-me-nots,	2	0	4	0	per bunch	1	0
dozen bunches	2	0	4	0	Violets (French), per bnch.	1	0
Narciss, various (French),	2	0	4	0	Violets (English), dozen	0	9
dozen bunches	2	0	4	0	bunches	0	9
Orchids, per dozen blooms	1	0	9	0	Wallflowers, doz. bunches..	4	0

PLANTS IN POTS.

	s.	d.	s.	d.		s.	d.	s.	d.
Arbor Vitæ (golden) dozen	6	0	to 12	0	Ferns (small) per hundred	4	0	to 8	0
Arum Lilies, per dozen ..	6	0	12	0	Ficus elastica, each	1	0	7	6
Aspidistra, per dozen ..	18	0	36	0	Foliage plants, var., each	2	0	10	0
Aspidistra, specimen plant	5	0	10	6	Genista, per dozen	6	0	12	0
Azaleas, per dozen	18	0	30	0	Hyacinths, per dozen ..	5	0	9	0
Cineraria, per dozen ..	6	0	9	0	Lilium Harrissi, per dozen	18	0	30	0
Cyclamen, per dozen ..	9	0	12	0	Lycopodiums, per dozen ..	3	0	4	0
Dracæna terminalis, per	18	0	42	0	Marguerite Daisy, dozen ..	6	0	12	0
dozen	18	0	42	0	Mignonette, per doz. ..	6	0	9	0
Dracæna viridis, dozen ..	9	0	24	0	Myrtles, dozen	6	0	9	0
Ericas, per dozen	9	0	24	0	Palms, in var., each	1	0	15	0
Euonymus, var., dozen ..	6	0	18	0	„ (specimens)	21	0	63	0
Evergreens, in var., dozen	6	0	24	0	Pelargoniums, per dozen ..	12	0	18	0
Ferns, in variety, dozen ..	4	0	18	0	„ scarlet, per doz. ..	4	0	6	0

Roots in variety for planting out, in boxes or by the dozen.



PROVISION FOR WINTER.

IN our last two articles on fodder crops we certainly had in mind a full supply of food for live stock in winter, or rather in autumn, winter, and spring; and now to gather up the threads of our subject before the season is too far advanced attention is called to certain other crops, all of them nutritious, easy of culture, and bulky of crop if only the land in which they are sown is then in good heart. Strange, passing strange, is it that we have again and yet again to insist upon the necessity of high and sustained fertility of soil if it is to yield full crops; not in a fitful way, but crop by crop, season by season, year by year. Really, it would appear as necessary to insist upon persistent effort as upon sustained fertility of soil, judging from the miserable apology for the use of manure which the practice of so many farmers offers.

Mention was made last week in the *Agricultural Gazette* of a stack of 95 tons of silage at Underley held in reserve in case it is wanted for ewes and lambs. This was made from after-grass, and the correspondent dwells upon the unreasoning prejudice of farmers in that neighbourhood who suffered so much after-grass to waste last autumn instead of using it for ensilage. Had they done so, using the silage for their own stock, and selling its equivalent in hay, they would have taken advantage of the highest prices we have had for many years, and have shown true business aptitude.

But we do not depend upon such autumnal growth alone for silage; it is much too valuable an addition to our provision of cattle food for winter to be left to a chance supply or surplus growth of herbage. By all means turn all such after-grass to account, also have a stack or two of silage made earlier in the season from any available fodder. Italian Rye Grass, Clover seeds, Tares, Lucerne, or mixed crops sown specially for ensilage, Anything calculated to give a vigorous growth, such as a mixture of Tares, Beans, Peas, Oats, and Wheat—any or all of them sown on rich land, to be mown, carted, and stacked when fully grown, while quite green, and with stem and leaf at its best as nutritious fodder. A better mixture than this is that of Messrs. Sutton & Sons, which includes Cocksfoot, Timothy, Tall Fescue, Perennial Rye Grass, Hungarian Forage Grass, Lucerne, Alsike, and Giant Cow Clover, of which they say all these are strong-growing plants, capable of producing great bulks for the scythe during the first few years after sowing, and they make silage of the finest quality. Hungarian Forage Grass (*Bromus inermis*), is of such recent introduction that it is not yet well known. Here is its character. It is a perennial, one of the earliest spring Grasses, growing with remarkable rapidity, yielding an immense amount of succulent herbage, more nutritious than Italian Rye Grass. It is also recommended for sowing alone now, 28 lbs. of seed per acre.

Green Maize must not be forgotten though the seed is not sown till June, when it may follow Cabbage, Kale, Tares, Rye, or Sainfoin. All of these are exhaustive crops, so too is Maize, tillage and manuring must therefore be thorough for the Maize. We like cleaning the last crop of Sainfoin with the sheep flock in folds, which does much for the exhausted land, and by drilling in addition, a full dressing of chemical manure with the Maize, the plant is well nourished, and growth vigorous. This plan is preferable to a heavy dressing of farmyard manure for many reasons, one of which is timely sowing. The Sainfoin being only cleared just before the Maize must be sown, time is precious and we cannot afford to wait for carting and spreading

manure before ploughing. This is looking ahead, but we are bound to do so, bound also to do our utmost to have plenty of such a splendid summer forage crop, and which at a pinch may likewise be turned to account for winter use.

Root crops also claim attention now, Carrots, Mangold, and Kohl Rabi coming first, and being followed immediately by a first crop of Swedes. The full advantage of autumn tillage for these crops is now realised. In the full tide of spring work every hour is of importance. With the land friable and open the work goes on with the greatest expedition, a good seed bed is a certainty, carting of manure is done quickly, the seed goes in well, and crops have a good start which often makes all the difference between success and failure. If there is any fear of serious attacks of mildew upon Swedes sown so early, then sow more Kohl Rabi which answers best if sown in April, and defer Swede sowing till May.

WORK ON THE HOME FARM.

Since the Lent corn sowing was finished, with the exception of some late sown Oats, fodder crops have been in hand, and now the root crops are being sown. First came Carrots, the Red Intermediate being our favourite sort. We had no difficulty about a deep fine seed bed; the seed was well hand-rubbed with dry sand, a little Rye seed being mixed with it, and it was drilled at the rate of 8 lbs. per acre. We use Rye seed with it to have the rows defined clearly as quickly as possible, because annual weeds coming up with the Carrots so often smother them, that without the Rye the rows cannot be seen; with it the hoes can be at work early and safely. Then when singling the Carrots, the Rye is pulled up, weeds cleared off, and the Carrot plants left clear.

Next come Mangolds, for which also the land was twice ploughed in autumn. It was ridged at the second ploughing (24 inches from ridge to ridge), so as to be ready for the manure in spring. Especial care is taken to place enough farmyard manure in the furrows to afford plenty of moisture to the young plant during the earlier stages of growth. We have so frequently seen a mere scattering of manure along the furrows as to be convinced of the necessity for calling attention to the importance of using enough. Upon the manure and sides of the furrow is sown by hand the chemical manure. Here is a safe prescription: Per acre, $1\frac{1}{2}$ cwt. nitrate of soda, $\frac{1}{2}$ cwt. muriate of potash, 2 cwt. steamed bone flour, 1 cwt. superphosphate, 1 cwt. common salt. Having scattered this over the ridges, they are split and so closed over the manures, the seed—10 lbs. per acre—is at once drilled, germination follows quickly, hoeing and singling done with care and promptitude. Large sensational roots are not cared for, rather do we prefer roots of medium size as giving the most useful and profitable crop. It will be seen that we mention no specific weight or measure for farmyard manure, the amount used may range from 14 up to 30 tons or cartloads per acre. We have always found a free hand with manure profitable for root crops, and our advice is to do likewise, to sow early, to leave the roots thick on the land, to keep down weeds, and to be content with roots of medium size.

METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

Lat. $51^{\circ} 32' 40''$ N.; Long. $0^{\circ} 8' 0''$ W.; Altitude, 111 feet.

DATE.		9 A.M.				IN THE DAY.				Rain.	
1894.	April.	Barometer at 32°, and Sea Level.	Hygrometer.		Direction of Wind.	Temp. of soil at 1 foot.	Shade Tem- perature.		Radiation Temperature		
			Dry.	Wet.			Max.	Min.	In Sun.		On Grass.
		Inchs.	deg.	deg.		deg.	deg.	deg.	deg.	Inchs.	
Sunday ..	8	29.921	55.8	50.8	Calm.	49.0	73.3	44.6	102.1	38.1	—
Monday ..	9	30.013	57.8	52.2	S.W.	48.2	68.1	46.2	114.7	37.6	—
Tuesday ..	10	30.093	55.9	50.5	N.E.	49.0	72.9	40.0	116.6	31.9	—
Wednesday ..	11	29.919	57.3	53.0	E.	49.9	70.7	44.3	101.9	36.2	—
Thursday ..	12	29.789	54.3	50.0	W.	50.2	63.3	50.1	105.2	42.7	—
Friday ..	13	29.812	51.2	46.1	N.W.	50.2	62.9	42.0	107.9	37.2	—
Saturday ..	14	29.744	53.7	48.2	S.E.	50.3	55.2	42.5	67.4	34.0	0.110
		29.899	55.2	50.1		49.4	66.6	44.2	102.3	36.8	0.110

REMARKS.

8th.—Hazy, sultry, and frequently threatening, but no rain.

9th.—Sunny and breezy.

10th.—Sunny and pleasant, but occasionally overcast in afternoon.

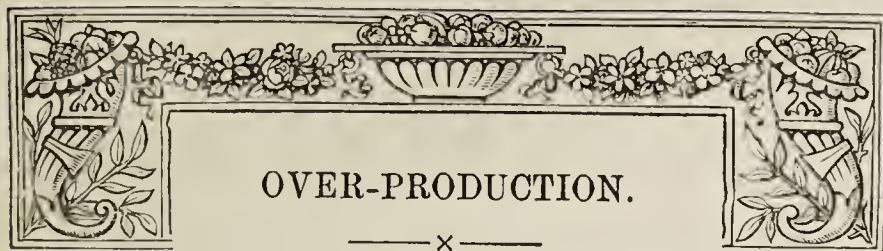
11th.—Bright sunny morning, overcast from noon, frequent thunder from 0.57 P.M. to 1.45 P.M., with spots of rain at 1.15, and half a dozen flashes of lightning between 1.20 and 1.30 P.M., bright sun again from 2.30 P.M.

12th.—Overcast till noon, and at times later, but gleams of sun at 10 A.M., and much sun in afternoon.

13th.—Generally cloudy till 11 A.M., bright sunshine after, brilliant night.

14th.—Overcast day with frequent spots of rain, shower at 6 P.M., and heavy rain from 9 P.M. to 10 P.M.

A very warm week, warmer than that usual in the middle of May.—G. J. SYMONS.



"IS market gardening, like the higher branches of agriculture, ceasing to pay? The following letter, which a firm of seedsmen received the other day, leads to an answer in the affirmative:—We are sorry to inform you that business is very bad. Produce being plentiful, the average prices of all kinds of vegetables have been much lower during the last three months than we have known them during the twenty years of our connection with the trade, and they appear likely to continue so for a considerable time longer. As an instance, note the following: We bought some Savoy and Kale plants of you last year, and we have not made as much of the produce from them as we paid for the plants alone. We have not sold a pennyworth of the Curled Kale, and are now about to plough the crop in. We believe that hundreds of tons of fresh vegetables have been sold this year—1894—for less money than the cost of carriage and salesmen's commission alone. The over-abundant supply of vegetables in the London markets is very extraordinary after such a dry summer."

We take the foregoing from a daily paper, and have no doubt it fairly represents the position. We have recently seen more acres of green vegetables than we should care to count that remain in the fields in which they are grown, for the simple reason that it is useless sending them to overstocked markets. "Surely they might fetch something," some reader may say to himself; and they might; but it is also certain they would cost something in carriage; also, if sold through a dealer, there would be commission, and under these circumstances the owners of the produce, who are not men to miss a chance if they see one, conclude it is the cheapest, in view of the possible risk of further loss, to leave the "stuff" at home, good though it may be, or was when in the best saleable condition.

The newspaper writer thinks it "very extraordinary" there should be such an over-abundant supply of green vegetables "after such a dry summer." It is possible that the growers, for the same reason, foresaw a scarcity, and filled up all the land they could with plants immediately the rain came. The earth was warm, "like a hotbed," and the growth of the crops unusually rapid. The autumn was prolonged and the winter deferred. By the time the frost came the ground was covered for miles with green vegetables. Few of these were injured during the short and not severe winter, at least in the southern counties; instead, then, of the abundance being extraordinary, it is but the natural result of the causes that produced it. The growers have sustained loss by their very efforts to reap profits—planting extensively, in view of a prospective scarcity, and the crops increasing in bulk under the long "growing" autumn far beyond their expectations. Under these circumstances there could be no other result than overcrowded markets in the spring.

Many of them could, no doubt, ill afford that loss, yet not a few have added to it materially, if not immediately, by thoughtless inactivity. Long after they knew of the impossibility of the produce "making anything" in the market they let it remain on the land, taking as much nutriment out of it as would well support a succeeding crop. The practice of allowing obviously useless crops to cumber the ground for weeks is a mistake too common. It is visible in gardens and fields, the land becoming poorer daily through being drained of its virtues. Waste crops should be

regarded as weeds and promptly cleared away; they are so cleared away by alert cultivators, who know the harm they are doing in exhausting the land.

"There is a great glut of Potatoes in South Lincolnshire at the present time. A Long Sutton correspondent states that in the marshes in that district there are miles of Potato pits, and that many farmers are almost giving their Potatoes away. They have been sold for as low as 6d. per sack, whilst large quantities are being given to the stock. It is not expected that farmers will put such a large acreage under Potatoes this year."

That is what we read in another newspaper, and the fact of the "glut" cannot be otherwise than bad for the farmers. We are very sorry for them, and not surprised at the possible great reduction in the Potato acreage another year. Farmers and market gardeners, too, as a body are very much like sheep. They seem to think and move in droves—nearly all in the same direction. This is one reason for the alternate gluts and scarcity of something or other. But there are exceptions. One shrewd farmer who grows Potatoes extensively and well, when he found the yield would be so great sold early, and benefited by his action. His neighbours, who waited for higher prices, had to take considerably lower or none at all. They did not think far enough ahead; nor will they again if the majority of them "give up" growing Potatoes. That is what many announce their intention of doing, and just because of this the man of longer thought intends to grow more. We shall see who is right, but the odds are on such thinkers as the grower last named.

He reminds one of the methods of a famous London market gardener who heaped up riches by the shrewd policy that he adopted for many years, as well as by his excellent work. "How is it, Mr. Blank, that you have prospered so much more than many persons who have no better land than yours?" was the question put to this brainy son of the soil. His reply was not elegant, and reminds of one of Thomas Carlyle's rugged remarks, but there was force in it. "Because," said Mr. Blank, with a sly twinkle, "so many persons are fools."

"Do you mind saying why they are in that unfortunate condition?" was the next feeler. After a moment's hesitation the old man—for old he was—said, "No. I have about done growing, and have plenty" (he meant plenty of money), "but if I had to start again I should do as I did before—and live. It was in this way, you see. When I found the market glutted in any one year with any one thing, I went in strong for that very thing the next year, because I knew hundreds wouldn't touch it."

That policy the very successful gardener pursued for nearly or quite half a century. If Kidney Beans, Mushrooms, Cabbages, or any other crops made little or nothing through overstocking the markets, he knew there would be a great limitation in the extent of those crops the following season, and therefore felt it his duty to make good the deficiency as far as he could and increase his banking account at the same time. Could he have done so well by acting in any other way? It is not easy to conceive he could have done better.

Instances are plentiful of the mistakes of too sudden changes in consequence of the peculiarities of one season. In the spring of last year persons could be named who forecasted a "fall" in Tomatoes and a "rise" in Cucumbers, therefore "went in" for the latter, and subsequently regretted it. Mushrooms were "down" last winter, and quick thinkers jumped at the conclusion that they would be down always, therefore decided to "let them alone," and have lately been whipping themselves in view of the "good thing" their neighbours have lately been making from the crops.

It is, no doubt, becoming more and more difficult to live and prosper by the produce of the soil, whether under glass or in the open, and it is only by the exercise of much thought, strenuous endeavour, and the most excellent work that the hoped-for success is in a fair measure attainable; and possibly the methods

of a market gardener who made himself famous, and of a prosperous farmer (for there is one left) may be worth reference at this juncture.—EXPERIENTIA DOCET.

FLOWERING TREES AND SHRUBS.

BEAUTIFUL as are the hardy flowers of which Mr. S. Arnott wrote in such an interesting manner at page 293 of your last issue, they yet require a something to assist them in showing their beauty to the best advantage, and this may be found among the trees and shrubs. By the direct contrast the superb beauty of either class is greatly enhanced, and the garden which contains both will command more admiration than that which contains either alone. There is not such a diversity of form and colouration to be found amongst trees and shrubs of these notes as is the case with hardy flowering plants, but as no garden of any pretensions is entirely destitute of them, mention will be made of those in flower at the present moment, and those which will reach the zenith of attractiveness in a short time.

Let us commence with flowering trees. And what more beautiful can be found than the Laburnum with its pendent racemes of yellow flowers? Thriving alike in town and country gardens, it deserves all its popularity. During the late spring and early summer months all the varieties are charming, not to say magnificent. In contrast to these are the Chestnuts, which, planted as single specimens, have an imposing appearance. Doubtless many readers of the *Journal* have seen the avenue of these noble trees in Bushy Park, and those who have not should seize the first opportunity of doing so. Then, too, there is the Yulan Tree, *Magnolia conspicua*, now in full bloom and presenting a perfect picture with its white, deliciously scented flowers. Another *Magnolia* of great beauty, and flowering somewhat later than *M. conspicua*, is *M. Lenné*. It is certainly deserving of far more attention than is at present accorded it, as is also the chastely beautiful *M. stellata*, of which the flowers are much smaller than the foregoing, the plant, too, being of a much dwarfer habit.

In a selection of flowering trees the Thorns must be given a high place, especially such varieties as Paul's Double Scarlet and the double white Multiplex, both of which being, when established, among the choicest ornaments of the garden. The Snowy Mespilus (*Amelanchier botryapium*) is admirably named, for when in full flower the tree appears to be covered with flakes of driven snow. The Cherries are rich in variety and utility, both the double and single forms being worthy of prominent positions. For blooming during February and March the Almonds may be named. The rose-pink racemes of *Robinia hispida* find favour with many gardeners, as also do the purple flowers of the curious Judas Tree. The Siberian Crab, presenting as it does when in fruit such a glorious sight, should have far more attention devoted to it.

Rich in beauty as are the flowering trees, the shrubs are far more extensive and diversified, and one scarcely knows when writing of them with what to commence or where a finish may safely be made. Perhaps no plants are greater favourites than Rhododendrons, and it is well within bounds to assert that they are the most useful of our flowering shrubs. They are so well known, and their high qualities so thoroughly recognised, as to render detailed mention in these notes superfluous, suffice it to say that where possible they should be planted. Of the highest utility are the Weigelas, which for ensuring a bright display during May are almost unsurpassed. Such varieties as *W. rosea* and *amabilis* are splendid when planted in clumps or as hedges, in which form they may be seen at Swanmore Park. No shrubbery is complete without a few Lilacs to emit their sweet fragrance and afford an abundance of ever welcome cut bloom. The Guelder Rose (*Viburnum opulus*) must ever remain a favourite, as also must the Mock Oranges, the best of which are *Gordonianus* and *grandiflorus*, though the common *coronarius* is by no means to be despised. The Flowering Currant (*Ribes sanguineum*) flourishing in almost any soil is very beautiful, especially when some of the more intensely coloured forms are planted.

The useful white *Deutzia crenata flore pleno* is, when clothed with blossom, a beautiful sight, and the same may be said of *Prunus sinensis fl.-pl.*, which in addition to its utility in the garden, is extremely floriferous when forced. The *Spiræa* family affords an almost endless supply of useful plants for the border, but worthy of cultivation in every garden are *S. prunifolia fl.-pl.*, with its arching branches covered with bloom; *S. arifolia*, white; *S. confusa*, *S. Thunbergi*, *S. palmata*, and *S. aruncus*, frequently called the Goat's Beard. The sweetly scented *Daphne Mezereum* and its white form should be largely grown, as also should *D. cneorum majus*, a dwarf growing variety of exceptional beauty. *Cydonia japonica*, when well grown, as it may be seen in scores of

gardens, is strikingly beautiful, and the old fashioned *Kerria japonica fl.-pl.* is not to be despised. Berberises, too, afford some splendid objects for the shrubbery, one of the best being *B. Beali* with its richly perfumed blossoms; *B. stenophylla* and *B. Darwini* are also most useful. The Forsythias, with their rich golden yellow flowers, are very beautiful, *F. intermedia* and *F. suspensa* being amongst the best. Amongst the varieties of *Pyrus* are some beautiful flowers, and a plant not seen often enough is *Exochorda grandiflora*. In favourable positions the Brooms are exceedingly effective, and the orange coloured flowers of *Buddlea globosa* might with advantage be seen more frequently than is the case at present.

From the plants above mentioned a suitable selection may well be made for the small garden, in a large one all should be seen.

Some attention with regard to mulching and pruning greatly enhance the beauty and utility of all flowering trees and shrubs.—R. H. R.

APRIL NOTES FROM AN IRISH GARDEN.

FAINT patches, daily spreading, of delicate tints amongst the trees herald the return of spring with all its varied train of fresh young life. Bunches of Kingcups (*Caltha palustris*) brighten up "the river's brim," whilst the vivid green sword-blades of the common Iris cleave the icy cold water. Amongst the numerous family is any more beautiful than this water Flag when decked with its canary yellow blossoms, unusually abundant last year? Unfolding leaves of the Beech are but yet fleecy flakes of the palest green, and to-day—

"The soft west wind is so light in its play,
It scarcely moves a leaf on the spray."

Sycamores were the first to don their bronzy hued garments. Blossoms of the Ash litter the walks, bringing forth the remark from the sweeper, "them's dirty bastes." Squirrels are busy aloft in the Chestnuts, doing a little pruning on their own account amongst the tender tops. Later on they will peep over the garden wall and do some thinning to the Apricots. Many flowering shrubs interspersed through the evergreens add a charm to the pleasure grounds. From now this department increases in interest and beauty until the climax is reached with the flowering of the hybrid Rhododendrons. After that, one notices a gap which summer cannot fill. But I am anticipating, so turn into the garden which is a combination of the *utile et dulce*, where from this time the flower basket is as often filled as the vegetable basket.

Pears and Plums have given the garden the appearance of a huge bridal bouquet, now giving way to the softer tints of the Apple blossom. Patches of bright colour enliven the herbaceous borders, but the Lilies of Lent have waxed and waned; blown are the huge trumpets of the family, nought but the humbler types remaining. The varieties of *Iris germanica* in a warm dry position on a border are unusually luxuriant and bristling with buds. *Iris Kämpferi*, to which another border, cool and moist, is devoted, has come through the winter well, protected only by last year's foliage. A good patch of *Myosotis dissitiflora* is a charming medley of pink and blue, and a bright corner of many colours is that occupied by Dean's Hybrid Primroses; any day last winter a pretty posy could be gathered from them. A long line of the ordinary Primrose, common though it be, does not look out of place under a row of Currant bushes, and the plants are seldom without flowers in the severest winter weather. One wonders why the simple flower furnishes so many letters to the papers. I have before in the *Journal of Horticulture* brought *Genista scoparia Andreana* under notice; its charming blossoms now open under the shelter of a warm wall, again deserve a passing recognition. *Doronicums* make a brave display; these large golden Daisies are appreciated dished up in a bowl of wet sand on the dinner table.

For dishing in a different form very good is that constant little friend, Ellam's Cabbage; a fine breadth is now at its best, and looks what it is—clean, succulent, and tender. I almost agree with Paddy, who said, "A dish of spring Cabbage is the finest thing I ever ate," though a neighbour's suggestion of improvement in the way of bacon elicited the response, "Ah, I nivar tried that!" The story, if true, had its sorrowful side. Summer Cabbages are to me fraught with unpleasant reflections, caused by the brood of the butterfly, another of our enemies. Whatever satisfaction ensues from dishing up one's foes, the revenge is not sweet. Broccolis are hurrying in altogether, many as large as a fashionable bouquet, but not the better for that. The recent rains have brought on the Asparagus; we cut above the soil, green, tender, and juicy. A lady once remarked to me, "We like to eat it all," and I think this was a common sense view of this esteemed vegetable. Bleached woody stems may fill a dish best, but it is

not the dish which comes empty away, and in the emptying pays a compliment to both gardener and cook.

March finished the Brussels Sprouts; they were never better nor more abundant, and in constant use from September. Until Gooseberries come in Rhubarb gets severe pulling; to enable it to pull through the ordeal it has just had a tonic in the form of a liberal dose of liquid manure flavoured with nitrate of soda. This did wonders with some weakly roots last year.

Amongst the "Praties" Sharpe's Victor as a first early makes the record against time, and gives general satisfaction in this locality. Parsley is and has been abundant; its rich unique green and beauty of form makes it appear to assert a claim for a place in the flower beds. On some occasions lines of it have been very close to the beds and not suffered by comparison. In a retrospective survey vegetables have been abundant and good, though the Onion loft is empty. Bad luck to the maggot. Yet out of evil may come good. Lessons have been learned, and "Forewarned is forearmed."

At present propitious weather favours the garden, and the prospective view is one of plenty, which carries with it a measure of peace to the gardener.—E. K., *Dublin*.

SOME FRIENDLY BEETLES.

BEETLES are amongst the insect pioneers of spring that show themselves when the sunshine is rousing up the many species which have passed the winter in a more or less torpid state, and hidden from our view. In the air, in water, on the earth, or upon plants and trees, beetles are now exhibiting their usual activity, and though reputed to be a slow race of creatures mostly, we find some can be swift in running, if not in flying, and they can manage a good amount of jaw work, as we know to our sorrow in the case of several garden species. Still, many of the early beetles do us no small service in destroying species that are very injurious to our crops, and which belong to other families, often of prolific habit. Unfortunately, the spring rambles of beetles frequently terminate their lives, as they have a propensity for getting crushed on garden paths and roads, also in the course of the usual operation of turning over earth some are killed by sundry implements. Not only beetles, but other friendly insects, meet their death, too, from the applications made to the soil and to plants of various insect-destroyers, since the effect of these cannot be limited just to the species we wish to clear away. A little attention and a slight knowledge of entomology, however, might help gardeners to protect the lives of some serviceable insects. Of course there are numerous species that we come upon against which no accusation can be made; but some, generally harmless, are open to occasional suspicions, the ground beetles for instance. Carnivorous by nature, some of them have been repeatedly captured in the act of devouring ripe, or partially ripe, Strawberries, and very likely others may be tempted, especially if other food be scarce, by the attractions of a succulent root or a juicy tuber. Our Strawberry foes chiefly belong to the genus *Harpalus*, and issue forth at night, hiding during the day; they may be looked for with a lantern, but I may remind gardeners now of the suggestion formerly made in these pages, that hundreds may be caught by putting, as traps, small drain-pipes loosely filled with hay, into which the beetles will readily creep.

Returning to our friends, the Carabi offer a well-marked and familiar instance of a useful tribe of ground beetles; though wingless, they are very nimble and very ravenous. Their long legs, armour-cased bodies, and trenchant jaws give them great advantage in pursuing prey; the larvæ or grubs are also carnivorous, but their life is passed under the earth. One that we frequently see in spring is *C. violaceus*, about an inch long, seemingly black, though really deep violet, with a golden tinge at the margins. It feeds upon other beetles, attacking our enemy the cockchafer, also on a variety of insects, often seizing caterpillars, and it preys upon slugs. Along the beds or amongst flower pots occurs the common *C. monilis*, so named from its peculiar adornments; a pretty and useful beetle, which people foolishly crush sometimes. Then in our houses we come upon the pitchy black *Sphodrus*, rather smaller in size. Should we see it amongst pots and boxes we need not kill it, for it hunts up insects that are fond of the warmth and moisture; it is even capable of mastering a cockroach should one appear. Dingy, too, are the Harpali, many of them, though some are green or bluish. These we commonly turn up with the spade, and we may spare them when we can, since they are predatory beetles; but one or two species, as above remarked, have lost their good characters by their sly visits to Strawberry beds. Rejoicing in the April sunshine, and becoming more numerous when the days lengthen, beetles of the genus *Amara*, popularly called sunshiners,

run over the beds and borders, or pass us in the air, aided by their ample wings; they have a broad thorax, prominent eyes, in colour chiefly blue or green, and are about half an inch in length. They are quite harmless to plants, so far as we know, subsisting on other insects—in fact, it is "unlucky" to kill a sunshiner, though I am not prepared to say what will happen if you do!

Those insects called the rove beetles are a remarkable family; the short wing cases do not cover the wings when folded, their antennæ are far apart, and the mandibles very strong, both in beetles and larvæ. Just now these beetles, the Staphylini, are in their larval condition, living chiefly under the earth, though they now and then take an excursion upon it; they are dark in colour, and not unlike the mature insect, only lacking wings, and quite as ravenous, devouring many insects, especially in spring; as they increase in size a few species feed also upon carrion. During the summer and autumn the beetles are common about gardens, roving on paths frequently by day, or flying after dusk. Most gardeners know *S. olens*, which walks fearlessly across a public roadway, raising its head angrily if it is threatened; it has not only formidable jaws as a weapon, but like some of its relatives, can also emit a fluid of very unpleasant odour. Still, it is an insect that is friendly to us; it has strength enabling it to conquer large earthworms and all sorts of larvæ.

During the spring or early summer the burying beetles of the genus *Necrophorus* emerge from their pupal state, busying



FIG. 52.—DENDROBIUM EURYALUS. (See page 322.)

themselves both in the open country and on cultivated land with the employment of interring small dead animals, to serve as food for their progeny, also other substances occasionally that are decaying or putrescent. By this means they enrich the soil, while they remove what is offensive, acting, indeed, both as scavengers and gardeners. These beetles are mostly black-and-orange in colour, strong winged to enable them to fly great distances; their digging is performed entirely by the head and mandibles or jaws. Allied to these are the Silphæ, or carrion beetles, narrow bodied and long-legged, the larvæ of which are flat, broad, and active, not unfrequent about gardens in April. They feed on fragments of dead animals or decaying vegetable matter; also they help in the decomposition of manure. The four-spotted Silpha has much the appearance of a large ladybird, and flies about very briskly. Another species, *S. lævigata*, works chiefly on the soil, where it watches for wandering snails, which it eats alive. One species, however, *S. opaca*, has a bad reputation; though a carrion eater, the larva at times does much harm to Beetroot in May and June.

April brings out from their winter retreats hosts of the common two-spotted ladybird, probably the most useful of the genus *Coccinella*, though small in size. Eggs are deposited by the beetles, which speedily produce a brood of larvæ, and these with the ladybirds interpose a check to the increase of the aphid hosts. Other species, less abundant, are also similarly busied from this time to the end of autumn; later on the larger seven-spotted species appears in gardens. We must not forget to number amongst our friends the showy and active beetles which young folks call "soldiers and sailors," from their being garbed in red or in blue. They are now entering the pupal state; the larvæ, which are rather like glow-worms, though not luminous, feed upon ground insects and earthworms. About midsummer the beetles appear, being partial to umbelliferous plants, upon which they hunt other insects, and also often do battle with their own kind.—

ENTOMOLOGIST.



ROSE SHOW FIXTURES IN 1894.

- June 13th (Wednesday).—Colchester.†
 „ 20th (Wednesday).—Isle of Wight (Shanklin).
 „ 26th (Tuesday).—Westminster (R.H.S.).
 „ 27th (Wednesday).—Windsor (N.R.S.) and Richmond (Surrey).
 „ 28th (Thursday).—Canterbury, Eltham, and Sutton.
 „ 30th (Saturday).—Sittingbourne and Brockham.
 July 3rd (Tuesday).—Farningham, Bagshot, and Diss.
 „ 4th (Wednesday).—Croydon, Reigate, and Tunbridge Wells.
 „ 5th (Thursday).—Hereford and Norwich.
 „ 7th (Saturday).—Crystal Palace (N.R.S.).
 „ 10th (Tuesday).—Gloucester and Wolverhampton.*
 „ 11th (Wednesday).—Hitchin and King's Lynn.
 „ 12th (Thursday).—Bath, Harleston, Woodbridge, and Worksop.
 „ 14th (Saturday).—New Brighton.
 „ 17th (Tuesday).—Helensburgh.
 „ 19th (Thursday).—Halifax (N.R.S.), Halesworth, and Trentham.
 „ 21st (Saturday).—Manchester.
 „ 26th (Thursday).—Southwell.
 „ 28th (Saturday).—Bedale.

* A Show lasting three days. † A Show lasting two days.

Any date of Rose shows, or of other horticultural exhibitions where Roses form a leading feature, not named above, I shall be glad to receive as soon as fixed, for insertion in future lists.—EDWARD MAWLEY, *Rosebank, Berkhamsted, Herts.*

ISLE OF WIGHT ROSE SHOW.

WE are informed that the exhibition of the Isle of Wight Rose Society will be held at Shanklin on June 20th. The date has been altered from June 13th to prevent clashing with Colchester.

THE PROSPECTS TO EXHIBITORS OF THE ROSE SEASON, 1894.

In "D., Deal's," letter to you (page 305) of last week's issue he refers to the stimulating effects on exhibitors of the prospects of the coming Rose contests, and he ends his remarks by the very cautious statement that all is still "uncertainty." As regards the season this is apparently a very sensible remark even if there be no novelty in it, anyhow it is a cautious one! All is still uncertain as to the future, but I much fear the uncertainty is not as regards the earliness of the season, which is manifest to anyone who takes an interest in the subject of weather, and who does not in our world-renowned climate?

What is really uncertain, and what we all look forward to with fear and trembling, is not the season before us, but where will our Roses be when the Rose contests are decided? I write on the 22nd April—a date when in an average year all who are exhibitors should have hardly anything in evidence on their Rose plants but the faintest signs of buds from which they hope to cut good flowers in the end of June or beginning of July. What is the position now? Hardly a plant which is not in active growth, many even with flower buds formed on shoots close on to a foot in length! Unless some severe weather be ahead of us, of which we certainly read nothing, and the papers of late point much the other way, we shall have an earlier season than the unsatisfactory one of 1893. I do not say as bad a season as that was, because we have had cooling showers at a favourable time, but anyone who takes an interest in gardening matters must be struck with the abnormal earliness of all flowers. Beginning with the *Chionodoxa Lucilæ* and cognate bulbous plants, which were in flower a full three weeks ahead of last year, and Daffodils, which with me this spring have been a disastrous failure, we now have all the beautiful varieties of May-flowering Tulips in full bloom; and *Ornithogalum nutans* and kindred flowers already past their flowering season. *Pæonies*, which look splendidly healthy, will be in flower within a fortnight, and *Lilies* are in rampant growth—more especially *Lilium testaceum* and *candidum*. I never remember the varieties of *L. speciosum*, which should flower in September or October, so far advanced, mine already being 18 inches high. I assume the cause of the extraordinary earliness of the growth of all garden subjects can only be ascribed to the remarkable heat of last year and the warmth of the present spring; but if other garden plants are showing this wonderful precocity, is it in the least likely that Rose plants will be backward? As far as I can judge the reply must be, Certainly not. I truly fear that the later Rose shows will be a great failure this year, simply from the fact that no sensible recognition having been taken by our Rose experts of the chance that we may have entered into a series of warm seasons, the dates of important shows are *later* than last year!

Last autumn I called attention in one of your contemporaries to a very remarkable and ably written letter published by the "Times" from the greatest wine importers of the United Kingdom, which letter I am surprised the press did not at the time take more notice. In it the probable advent of a cycle of warm, and for some forms of horticulture, more especially Vine culture, favourable seasons was most ably discussed, and the possibility of another season, or seasons, similar

to that of last year was prognosticated. What was so clearly stated in that letter as possible or probable seems about to be verified this year, and if it be I shall only be one of many who will regret that those responsible for the arrangement of our Rose meetings seem either unable "to discern the signs of the times," or wilfully to defy fate.—CHARLES J. GRAHAME.

[Owing to climatic influences there is a difficulty in fixing a date for the National Rose Society's Show at the Crystal Palace to suit both northern and southern growers. For instance, from 1888 to 1893 inclusive, and when the dates were 7th, 6th, 5th, 4th, 2nd, and 1st of July respectively, southern growers secured the principal prize in the leading class four times, the northerners coming to the front only in 1889 and 1893—early seasons. In 1891, the date being July 4th, some of the northern growers were unable to compete. It is obvious, therefore, that the latter have no chance of exhibiting in early seasons unless a later date is occasionally fixed. We trust the later Rose shows this year will not be such "great failures" as our correspondent fears, though he is not without strong grounds for his anticipations.]

JUDGING from present appearances we may reasonably look forward to an early and good season for Roses of all descriptions. To-day (April 21st) I have gathered our first bloom of the season from the open air. The variety was that particularly beautiful and free-flowering Tea, Goubault; the bloom was cut from a low south wall. Both Hybrids and Teas have broken wonderfully strong. The growth is clean, and does not seem to have been checked in the least by the recent frosts.

This fine condition at present is doubtless due in a great measure to copious rains we had a week ago, which came at a time when the soil was thoroughly warm, and in exactly the right condition to promote rapid growth if thoroughly moistened. Neither maggot nor green fly seems to have made their appearance at present, and the imagination of many a Rose grower has perhaps already begun to conjure up visions of a wealth of queenly beauty in the times to come.—H. DUNKIN.

MR. A. HILL GRAY ON TEA ROSES.

MR. ALEXANDER HILL GRAY, of Beaulieu, Weston, a famous grower and successful exhibitor of Tea Roses, read a paper on this subject at a recent meeting of the Widcombe Horticultural Club. He first attempted to grow Teas in the open air for seven or eight years at Dunkeld, in the Perthshire Highlands, and came to Bath on account of the more kindly disposed climate of the south-west of England. His experience in this neighbourhood had strengthened his opinion that, except where the soil is deep and heavy, the summers are too warm for the perfect production of Hybrid Perpetuals for exhibition purposes, while on the other hand it was notorious that the winters were far too severe to allow Teas to feel thoroughly at home.

Therefore he felt disposed to regard from the rosarians' point of view the climate of Somerset and that of the West of England generally as one of Nature's half-way houses, and more fitted for the perfect cultivation of Hybrid Teas than either for Hybrid Perpetuals or Teas. Still the fact remained that without coddling the plants, but by supplying reasonable protection to them, we so far succeeded in contending with the elements, that at no Continental Rose show were finer Tea Roses to be seen than were annually exhibited at the leading shows in England. For affording protection against winter frosts his experience was in favour of dry Ferns or leaves for beds, and nets or Spruce branches for walls. In one winter mice made nests into the hay which protected many of his wall trees, and completely barked many *Maréchal Niels*, but he saved all but one by pruning below the gnawed bark.

Speaking of the manure used, Mr. Gray said in less than three years, prior to 1889, he had applied more than 1300 tons of cow, pig, and horse manure to his ground, to say nothing of hoof parings, brewers' grains, sheep manure, half-inch bones, fish guano, and crushed bones. During last summer he agreed to purchase a few loads of putrid horse flesh, with the result that upon its delivery one of his men fled in terror. He had dug, trenched, and worked the ground over and over again, incorporating with it burnt earth, road scrapings, 150 tons of virgin soil, and 200 tons of decayed turf. With the exception of pig manure, of which Roses were fond, he endeavoured to let alone too strong abominations, but within the last five years, in addition to the manure mentioned previously, 500 tons of ordinary farmyard refuse had been given to his trees with heavy consignments of oyster shells, finely ground down, burnt earth, about a dozen tons of wool waste with a much larger quantity of half wool half cotton waste, hoof parings, a ton of horn shavings, with 3 tons of feathers, lime, and soot.

Describing the walls at Beaulieu as "royal preserves" for Teas Mr. Gray mentioned that all the trees on the walls are attached to wires. Among the varieties cultivated on the walls "imperator primus" stands *Maréchal Niel*. The first blooms on the walls are nearly all over by the 10th July, although on standards, planted in shady places, *Maréchal Niels* continue to afford smaller blooms off and on through the summer. These standards are supported by stout posts firmly planted. To encourage the shooting of laterals all the most vigorous branches of the *Maréchal Niels* had been bent right round and tied to supports. In various sheltered places *Comtesse de Nadaillac* had been planted on the walls. Another acknowledged queen was *Souvenir d'Elise Varden*, but this variety was not planted on the walls because it bloomed quite early enough.

Detailing the other varieties he grows, Mr. Gray remarked that in *The Bride* we have a diamond of the first water. *Marie Van Houtte*

was another Rose which loved the wall. If there were a north wall at Beaulieu he would cover it with this variety, Anna Olivier, Madame Lambard, and other such thin-petalled Roses. While he urged that the warmth and shelter afforded by walls must be conducive to the growth of the plant, and therefore to the flower, on the other hand certain disadvantages were perceptible—for instance, in such a season as last year the flowering was over long before the period for the shows. Undoubtedly standard Teas, whether grown on or off walls, usually produced much finer blooms than dwarfs or Briar cuttings—indeed, to grow some of the smaller varieties of Teas to perfection, such as Souvenir de Thérèse Levet, Ethel Brownlow, and others, it is necessary to cultivate them on standards, and even Madame Cusin and Souvenir d'Elise Varden never seemed to put forth all their strength as they did when grown upon standards.—("Bath Chronicle.")

DECORATIVE BRITISH FERNS.

THE SHIELD FERNS (POLYSTICHUM).

(Continued from page 238).

THOUGH the Polystichum family is by no means a large one, three out of our forty odd native species of Ferns belong to it; these are the Holly Fern (*P. lonchitis*), the Hard Shield Fern (*P. aculeatum*), and the Soft Shield Fern (*P. angulare*), the last being treated as a form of *P. aculeatum* by many botanists. From the standpoint of decoration the Holly Fern has little practical value, since though undoubtedly very pretty, with its dark green spiny rigid once-divided fronds, it has sported very sparsely, only one good crested form existing, and as a thorough mountain Fern is too apt to go wrong under lowland culture to be very useful in the direction indicated. Its chief foe is drought, both aerial and terrestrial, its home being among the clouds.

Both the other species, however, are found at lower levels, and are not only so amenable to culture as to be easily grown, but their perfectly evergreen nature, and above all their immense fertility in handsome sports, entitle them to the first place in the consideration of the British Fern lover. So much so, indeed, is this the case that every connoisseur drifts sooner or later into the position of Polystichum fancier par excellence, assuming always that the space at his command permits the full indulgence of his hobby. This obviously is a condition *sine qua non*, since many of the best varieties are of spreading habit, and with their yard-long fronds radiating from a common centre demand individually considerable space for their due development.

The normal form of Shield Fern is easily discriminated from other species by the pinnules or secondary divisions being shaped like a mitten or fingerless glove, fringed more or less with sharp points. In the Hard Shield Fern (*P. aculeatum*) these are larger and of a glossier harder make than in *P. angulare*. The fructification is dot like, each spore heap being covered by a mushroom-shaped indusium attached by its centre to the frond by a short stalk. As this cover is perfectly round, the Fern, apart from the spiny character described, is easily discriminated from the Buckler Ferns, in which it is so deeply notched as to be distinctly kidney shaped. The fronds are long and narrow, rising some 3 feet or more high, twice divided, symmetrically arranged round a circular crown, and profusely covered with overlapping brown scales, which under a strong lens are seen to be very beautiful specimens of Nature's lacework. Both species are thorough ground Ferns, lining sloping banks and hedgerows in shady damp positions, but avoiding actual boggy places. Under culture, therefore, good drainage is an essential. In many parts of the western counties *P. angulare* is found profusely associated with the Harts-tongue in the hedgerows; but as we approach the north it becomes scarcer, until in Scotland it is comparatively quite rare, *P. aculeatum* taking its place sparsely in the burn-sides.

For the reasons above given no species probably has received so much attention from the varietal point of view as this, such ardent workers as the late Colonel A. M. Jones of Clifton, Dr. E. F. Fox of Bristol, Mr. Carbonell of Usk, all alas! having now joined the majority, Messrs. G. B. Wollaston and E. J. Lowe, who are still with us, having made more or less a specialty of the culture of both the hard and soft forms. Hence while we owe a large number of beautiful varieties to the keen eyes of assiduous hunters, a very large per-centage of extant variations are due to selective culture from their spores. It is to *P. angulare* that we owe by far the majority of natural sports and cultural improvements, though it is to *P. aculeatum* that we are indebted for that beautiful form known as *P. ac. pulcherrimum*, which, *mirabile dictu*, was found by a farm labourer in a hedge near Chard, Dorset, close to the house of the late Dr. Wills, one of our most successful collectors, a curious fact indeed that it should have escaped the notice of such an ardent hunter on his own particular ground. As this Fern is perfectly barren it is naturally very rare, though it yields a fair number of offsets, which are eagerly acquired. In this form the mittens are very slenderly elongated, and the side divisions also terminate in extenuated tips towards the end of the frond; these pinnæ curve inwards near the midribs, and overlap each other, forming a perfectly unique termination of exceeding grace.

The crested forms of *P. aculeatum* are not numerous, but embrace some very fine ones. *P. ac. Abbottæ* and *acrocladon* are by far the best; the former is a gem of neat but bold cristation. Undoubtedly the most interesting form in this species, or rather between this species and *P. angulare*, is a hybrid raised by Mr. E. J. Lowe. This is a narrow cruciate variety, the side divisions being in duplicate or triplicate and radiating from point of attachment to stalk, a character possessed

exactly by the *P. angulare* parents, the spores of which were sown with a somewhat dense form of *P. aculeatum* (*P. ac. var. densum*), to which it was communicated by cross-fertilisation. This was the first undoubted instance of hybridisation. Of course the effect produced places the facts beyond all cavil, especially as seedling plants begin as *P. ac. densum*, and only assume the other character as adult plants.

Of *P. angulare* no less than 394 forms are described by Mr. Lowe's recent lists, of which 236 were found wild, from which it is obvious that it well repays the variety hunter, since with very few exceptions these wild finds surpass the sub-varieties raised from them and named as distinct, embracing as these latter do a good percentage of crosses of doubtful merit. In this species, as in *Athyrium*, the chief varietal sections are the cristate or tasselled, and the plumose or extra feathery, and it is in this latter section that the greatest triumphs of selective culture have been arrived at, viz., the *divisilobum plumosum* class raised by the late Colonel A. M. Jones and Dr. E. F. Fox from a far inferior wild plant. So immense indeed was the stride in this case that Dr. Fox could not credit the parentage until a second sowing was made with like result. The best of these plants include *P. a. Baldwini*, *densum*, *laxum*, and *imbricatum*, all of which are perfect marvels of delicate dissection coupled with amplitude of frondage. *Baldwini* is the "kalothrix" of the species, the ultimate divisions being almost hairlike, while "imbricatum" is extremely dense and of much harder character. "Densum," however, is hard to beat, and we must consequently bracket all these together as the three best. Mr. Pearson of Chilwell raised some grand plumose forms which rank as a good second, and have the further advantage of bearing bulbils freely, which the others do very sparsely indeed, and hence are rare as well as precious. Though reputed sterile I have succeeded in the case of "densum," not only in finding solitary spore cases with the aid of a good lens and plenty of patience, but we have raised three plants from spores which though young promise to be thoroughbreds and worthy of the stock they sprang from.

Among the best of the wild plumosums are *P. ang. Pateyi* and *Wollastoni*, the former a most delicate textured and perfectly barren form, i.e., a true plumosum, the latter a splendid robust grower and sparingly fertile. *P. a. plumosum grande* (Jones), raised from same source as Mr. Fox's plants, is very handsome. With regard to the crested forms there are so many as to constitute a veritable *embarras de richesses*, and we can obviously only pick out a few of the more striking. *P. a. cristatum*, No. 10 (Wollaston), is very neatly crested at the sides with a heavy terminal tassel, a very fine regular grower. *Grandiceps* (Talbot), *grandiceps* (Moly), and *nudicaule grandiceps* (Barrand), are the best of the heavy crested or *grandiceps* section. *P. a. cristatum cristato gracile* (Gray), *multilobum cristatum* (Jones), *Thompsonæ*, *Willsi*, and last but not least *percristatum* (Moly), are all gems of first water, the latter having the pinnules crested, as in a minor degree has *cristato gracile* (Gray).

Several curious forms called *brachiato cristatum*, and quite peculiar to this species, have been found in which the frond splits up near the base into three, forming a sort of trident with heavy bunch crests at each point. *P. a. brachiato cristatum* (Gray), and ditto (Keall), are the two most striking, the latter, to my mind, especially so. A form called *Kitsonæ* a little akin to these, does not seem to know its own mind, assuming quite different forms of frond at different times, and hence is more curious than beautiful. *P. a. Wakeleyanum* is a cruciate form with a crested tip; several cruciate finds are chronicled, but this is certainly the best. It has been the ambition of many raisers to cross this with a crested form, and so arrive at a parallel with a f.f. *Victoriæ*, but so far success has not been reaped, so Nature here at one stride has far surpassed the result of man's best combinations. Some very charming congested forms are *P. a. Lyelli*, a little gem only a few inches high; *P. a. parvissimum* (a misnomer, since it grows 18 inches high); *congestum* and *crispatum*, all dense and compact.

As a sub-section of the plumose forms we must by no means forget the *pulcherrimums*, of which five finds are recorded—viz., *P. a. pulch.* (Moly, Wills, Padley), and Thompson's, plus Moly's marvellous *variegatum*. In all these the lower pinnules are much elongated and sickle-shaped, giving the frond a very ornate appearance. The chief interesting feature, however, is that these attenuated tips are capable of developing prothalli—i.e., the small green scales usually produced by the spores as the first step in reproduction, so that, if laid down upon the soil new Ferns can be developed. This peculiarity has been termed "apospory," and seems associated in this family solely with this varietal type. Padley's, Wills', and Moly's forms have all produced it, but Thompson's, so far, we believe, remains to be tested. In addition to the true plumosum, a number of decomposite varieties exists, in which the fronds are extremely divided but hardly extra leafy. Of these, *P. a. tripinnatum* (Gillett), *decompositum splendens* (Jones), and *d. s.* (Moly), are the best typical forms. The *proliferum* section is interesting, as bearing bulbils more or less freely in the axils of the pinnæ, and even of the pinnules. *P. a. proliferum Allchini* is a long narrow form well known in the trade, its easy propagation having actually rendered it a market Fern despite its British origin. *P. a. p. Wollastoni*, *Crawfordianum*, *Henleyæ*, *Footi*, and *cristatum* (Ivery) are all good; the last a beautiful crested and very prolific form which ought to be as common as *Allchini* if justice were done to it.

Space fails me to dilate upon a hundred others, such as the *rotundatum* finds with round pinnules; *linearis*, thread-like in their attenuation; *setosums* profusely set with fine bristles; *perserratum*s, a series of beautiful serrulate gems, and many more, but I opine enough has been

said to demonstrate the versatility of the species and its capacity for justifying our heading of Decorative British Ferns to the full. Here, again, our little islands have yielded hundreds of pretty sports, while all the rest of the world, though the identical species is widely spread, has managed to send us the magnificent contribution of one. — C. T. DRURY, F.L.S., F.R.H.S.

(To be continued.)

ROYAL GARDENERS' ORPHAN FUND.

WE are glad to publish the following first subscription list in connection with the annual dinner on May 10th.

	£	s.	d.
Sir Julian Goldsmid, Bart., M.P....	25	0	0
Sir Henry Peek, Bart.:			
Hon. Mrs. Peek...	10	10	0
Miss Peek...	10	10	0
Miss Violet E. Peek...	10	10	0
Miss Gwendolen Peek...	10	10	0
Messrs. J. Veitch & Sons...	42	0	0
Baron Schröder...	10	10	0
J. W. Prince (per G. W. Cummins)...	10	0	0
Leopold de Rothschild...	10	10	0
G. C. Raphael...	5	5	0
H. Herbst...	5	5	0
A. W. Sutton...	5	0	0
H. J. Cutbush...	4	4	0
Philip Crowley...	2	2	0
Sir Hugh Low...	1	0	0
A. Dean...	1	1	0
J. Clayton...	1	1	0
W. Thomson...	1	1	0
John Lee...	1	1	0
J. Walter & Co.	1	1	0

THE BECKENHAM HORTICULTURAL SOCIETY.

LECTURE ON PRIMULAS.

THIS is one of the very few local horticultural societies of the kingdom that seems to realise there are other and higher duties for it to discharge than is found in the mere holding of flower shows. It has an excellent inspiring spirit in the person of its Secretary, Mr. Thornton of Beckenham, who annually arranges a series of lecture meetings held in the public hall. The concluding one of the winter season was given in that place on Thursday of last week by Mr. A. Dean of Kingston-on-Thames, who discoursed to a large and greatly interested audience for an hour and a quarter concerning the "Hardy Primrose and its Allies."

The Vicar of Beckenham presided, and in introducing the lecturer referred to the singular coincidence that it was Primrose Day, but stated that the fact had no political significance. This was confirmed by Mr. Dean, who said that the date was fixed for his convenience, and he had to admit with due humiliation that he had no knowledge as to the nature of the day until that morning. He pointed out that florists had not the least of concern in the Primrose as a political emblem, except there was the belief that for them there was no money in it. Botanists did strongly object, on the ground that the employment of the flower in that way might ultimately lead to its extinction as a wild plant. That was, however, a matter in which botanists were not to be held blameless, for they, or at least sham imitators, were rapidly clearing the country of many rare hardy plants, and thus all lovers of natural beauty suffered.

Mr. Dean then dealt with numerous British and imported species that are easiest to grow, described their characteristics, dwelling especially on those that were esteemed the originators of the garden Primrose, Polyanthus, and Auricula; also upon the beautiful floriferous forms of floribunda, obconica, and Sieboldi, all so valuable as greenhouse plants.

Then turning to garden varieties, the show forms of the Auricula were described, especially the points of edged and self flowers, also Alpines, laced, fancy, double, and border sections; these latter were strongly commended, not only for their remarkable hardiness, growing freely in any soil, but also for their great variety and spring beauty. Then came the gold laced Polyanthus, the different forms of red and black grounds, the proper markings of lacing as needed by the florists, and some of the best illustrative kinds were described. Next came that wondrously beautiful section the border or fancy varieties, with all their varied forms and colours, including the finest forms of flowers. The Hose-in-Hose, Jack-in-the-Green, double, and other sections, their proper culture being fully detailed. Mr. Dean very strongly advised all present who had gardens, large or small, to grow some of these charming hardy spring flowers.

Finally the true forms of Primrose, both single and double, were dealt with. The origin of the fine Bedford strain of singles was mentioned, and their nature and properties. It was specially emphasised that the true Primrose strain was not to be confounded, as is so commonly the case, with the Polyanthus. It was true that constant breeding from seed did create forms of both sections that had some of the features of both, but careful selection could keep both strains fairly true. The Primrose would, if well done, not only bloom nearly all the winter if open, but were always fully a month earlier to profusely bloom than were the Polyanthus.

The doubles were briefly described, the lecturer stating that there were at least a dozen distinct forms in cultivation, but they preferred a moist climate best. Of these it was said that many had been in existence for generations, that they were probably originated by the Dutch or Flemings, and that they could only have come from good single forms. On the motion of the vicar a hearty vote of thanks was awarded to the lecturer. The Rev. Mr. Arnott was also thanked for his kindness in presiding.

Messrs. H. Cannell & Co. exhibited a basket of charming border Polyanthus, double crimson Primroses, Primula Sieboldi, marvellous trusses of Zonal Pelargoniums, very fine flowers of Carnation Miss Cannell, a truss of Canna Queen Charlotte, and some samples of Broccoli Latest of All. Mr. Webster, Helsby Park Gardens, showed a beautiful bouquet of Polyanthus and foliage, and Mr. Boatwright, Langley Court Gardens, showed good plants of Primroses and Polyanthus.

LIVERPOOL NOTES.

BROCCOLI.

IN noting the remarks on Broccoli in your two last issues I may say that I have never had for many years such a supply as the present. Although registering 30° of frost at one time during the winter the plants stood the test well, and I only lost about 3 per cent. out of a plantation consisting of some 500 plants. The seed was sown the first week in April, 1893, and when the early Potatoes were lifted the ground was levelled and made ready for the Broccoli. Some plants had become tall, and were too much to put in with a dibble, so a spade was used. The plants soon made progress, and have scarcely ever suffered from the frost. I attribute the success to planting them in a slanting position, for there is not then the same facility for winter rains and frost to lodge at the base of the leaves.

The succession, too, has been very good, commencing with Michaelmas White. Then followed Snow's, afterwards Vanguard, a good hardy sort. Of Model I never lost a plant; Safeguard followed, and I was cutting fine heads in March. Last year and this I have tried two sorts for April cutting—viz., April Queen and Mammoth. The former is rather tall, but gives fine heads of snowy whiteness, whilst the latter is the dwarfest and hardiest of all Broccoli, and was the only variety that stood the winter of 1892. Leamington is just turning in, and with Late Queen I finish the Broccoli season.

LIVERPOOL HORTICULTURAL ASSOCIATION.

The last meeting of the session was held in the Wm. Brown Street Museum, Liverpool, when a paper, on "Hyacinths and Tulips for Exhibition," was read by Mr. J. V. Thompson, gardener to J. C. Sinclair, Esq., Sefton Park. The essay was brief and to the point; the soil, potting, treatment during winter, and preparing them for exhibition being ably dealt with. At the close a discussion ensued, being taken part in by Messrs. Pinnington, Sargent, Bennett, Massey, Stoney, and Agnew, the Chairman (Mr. White) adding much to the pleasure of the evening by his eloquent remarks. Owing to ill health, Mr. Edwd. Bridge, who was appointed Secretary at the annual meeting, has been obliged to resign, the post being again taken by Mr. W. Dickson, the late Secretary. The summer Show will be held on August the 4th and 6th, in Sefton Park.

PYRUS JAPONICA.

With me this season the above beautiful flowering plant has been especially fine, the low walls glowing with masses of scarlet whilst it has been in bloom. A large old plant, which is planted on some rockwork and overhanging a portion of our lake, has been very effective. It receives no pruning, and always blooms freely; but where a plant is trained to a wall a judicious use of the knife is very necessary to keep the shoots well furnished with good growth.—R. P. R.

R.H.S. EXAMINATION IN HORTICULTURE, MAY 1st. CENTRES.

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|---|--|
| 1, London (R.H.S. Offices, 117, Victoria Street, S.W.). | 16, Preston, Lancashire. |
| 2, Aldenham, Herts (Technical Institute). | 17, Stafford (Public Hall). |
| 3, Watford (Public Library). | 18, Southampton. |
| 4, Royston, Herts. | 19, Penrith, Cumberland. |
| 5, Broxbourne, Herts. | 20, Wolverhampton (Free Library). |
| 6, Batley (District School). | 21, Bedford (Central Schools). |
| 7, Cambridge. | 22, Leicester (Old Town Hall). |
| 8, Barrowmore, Cheshire. | 23, Malvern, Worcestershire. |
| 9, Plymouth. | 24, Addlestone, Surrey (St. Paul's Schools). |
| 10, Gloucester (School of Science). | 25, Hook, Surrey (National School). |
| 11, Hawkhurst, Kent. | 26, Farnham. |
| 12, Deal, Kent. | 27, Banff, N.B. |
| 13, Swanley College, Kent. | 28, Dundee (Technical Institute). |
| 14, Dereham, Norfolk. | 29, Edinburgh (Heriot Watt College) |
| 15, York. | 30, Peebles. |

The above are the centres, so far, at which the Royal Horticultural Society's Examination in Horticulture will be held on May 1st, from 7 to 9.30 P.M. It will be seen that an examination will be held in London at the Society's Offices, 117, Victoria Street, S.W., so that gardeners in and around London may have an opportunity of sitting by paying the usual fee of 3s.



THE WEATHER IN LONDON.—The past week has been characterised by changeable weather in the metropolis. Sunday was fine but cold, especially at night, and early on Monday similar weather prevailed, changing to rain towards the evening. Tuesday was fine, but rained heavily during the afternoon. Wednesday opened wet, but at the time of going to press there is a prospect of a change.

— **MANCHESTER HORTICULTURAL SOCIETY.**—We understand that the Earl of Derby will open the Exhibition of the Manchester Botanical and Horticultural Society on May 11th, at 2.30 P.M., and will preside at the annual dinner, which will take place in the gardens at 4 P.M. on the same day.

— **CRYSTAL PALACE SUMMER SHOW.**—The summer Exhibition of plants and flowers will be held at the Crystal Palace on May 9th and 10th. We are informed that the entries close May 2nd, and intending exhibitors who are desirous of obtaining schedules should apply to Mr. W. G. Head, Superintendent, Gardens Department, Crystal Palace, S.E.

— **DEATH OF MR. JAMES SIMPSON.**—Mr. Alfred Watkins announces with sincere regret that his late respected partner, Mr. James Simpson, died on 11th April, in his seventy-fourth year, after six months' illness. The business will be carried on as usual, under the same name of Watkins & Simpson, and with the same staff as heretofore.

— **WORK ON STRUCTURAL BOTANY.**—We have received from Messrs. Black "An Introduction to Structural Botany," by Mr. D. H. Scott of the Royal Gardens, Kew. In dealing with the subject three typical plants have been selected—the Wallflower, the White Lily, and the Spruce Fir. For those students who have already acquired an elementary knowledge of botany in general, and are desirous of more deeply pursuing the subject on special lines, the work is to be recommended as being a simplified exposition of the structural branch of the science. For absolute beginners it is apparently not intended, as it either subordinates or leaves untouched the important aspects of physiology and system.

— **TRITELEIA UNIFLORA, AND T. UNIFLORA PALLIDA.**—In the midland districts and near the large manufacturing towns these very pretty early blooming bulbous plants grow and flower admirably and are perfectly hardy, growing out in the borders undisturbed and through the month of April. Each cluster is a mass of white and lilac tinted white flowers, and is also a pretty plant for pot culture. They are not generally known, and well deserve more general cultivation.

— **A HYBRID AURICULA.**—About five years since a seedling hybrid was raised in the Kings' Norton Nurseries near Birmingham, the presumed result of a cross betwixt a white-edged florists' variety of Auricula and Primula marginata. It flowered in 1892 and again in 1893, and a plant in bloom was exhibited at the Narcissus Exhibition in Birmingham, April 18th and 19th, by Messrs. Pope & Sons, the raisers, and was awarded a first-class certificate. The habit partakes very much of the Auricula, with deeply serrated powdered foliage, with a good sized truss of medium-sized, well-formed, Auricula-like flowers, of a pleasing, blue, lilac-tinted colour with a small light eye.—D.

— **KEW GARDENS.**—Favoured by the somewhat exceptional season vegetation in the Royal Gardens at Kew is already far advanced. The Horse Chestnut trees have almost completely assumed their summer aspect, and the inflorescence is even beginning to be apparent upon the dark background of the foliage. In places the Magnolia conspicua is still noticeable by its profusion of large but rapidly falling flowers. Apart from the Narcissi, Primroses, and Anemones which are scattered among the grass, the most prominent floral feature is the blossoms of the different species of Pyrus—Pollveria, spectabilis, and baccata. Many of the large timber trees are also in the flowering stage, and serve as an interesting study. The Wych Elm still retains in festoons part of its curious inflorescence known as "locks and keys," and the Hop

Hornbeam (*Ostrya carpinifolia*) cannot fail to attract attention by its multitude of evenly distributed Hazel-like catkins. On the wall fronting the collection of herbaceous plants the agglomerated purple masses of the now blossoming *Ceanothus rigidus* are worth investigation. Fourteen beds of Tulips enliven the vista of the main walk, which terminates in a large concentrical arrangement of Auriculas, Phlox and Alyssum saxatile liberally interspersed with numerous varieties of Tulips. Given a warm and sunny afternoon, visitors to the gardens will find themselves amply repaid for their trouble in going to Kew.

— **USTILAGO VAILLANTI.**—Through an error in transcription on the part of one of my correspondents, the name of this fungus which attacks the *Chionodoxas* and allied plants appears on page 293 as *Ustularia*. The above is the correct name.—S. ARNOTT.

— **QUEEN WASPS.**—If present appearances portend anything, we may expect a great plague of wasps again this season. Within the past fortnight I have already paid for destroying 151 queen wasps, some of which were unusually large and full of brood. Many were caught around the Gooseberry bushes among the bees, and on removing old fermenting material from an outdoor Rhubarb bed some were found crawling out of their winter quarters.—A. ALDERMAN, *Effingham Hill, Dorking*.

— **BEDFONT YELLOW WALLFLOWER.**—This fine form was one of my own selections, made after some patient waiting, several years ago, and was then certificated by the Floral Committee of the R.H.S. It grows about 13 inches in height, has very stout stems, and carries large spikes of the finest flowers of a deep yellow—indeed, almost orange colour; the leafage is as dark as is that of the blood-red form. I saw a large breadth of this in bloom at Bedfont the other day, where it was remarkably effective.—A. D.

— **BIENNIALS FROM CUTTINGS.**—Biennials are often more easily propagated from cuttings than by sowing seed; besides, when good strains of flowers are secured there is no fear of them being lost and inferior ones substituted, as is often the case when seed is wholly depended upon. Cuttings from biennials require little or no preparation further than breaking them off with a heel, then either planting at once in their permanent places or in nursery beds. Now is a good time to start with Wallflowers and Sweet Williams.—W. T.

— **CHISLEHURST GARDENERS' ASSOCIATION.**—The members of the Chislehurst Gardeners' Association brought their third winter session to a successful close last week. The Association numbers seventy-four members, and after paying all expenses a balance remains in hand of £1 9s. 11d. During the session twenty-four meetings had been held and twenty-one papers on gardening subjects read. The library, which was added last year, contains sixty-two volumes of books for reference on gardening matters, which have been largely used by the members.

— **STRAWBERRY ROYAL SOVEREIGN.**—This is the second year I have grown this fine Strawberry in pots for forcing. It forces well, coming into flower with very little heat and produces fine handsome fruit of excellent quality; it also travels well, being very firm and not liable to get bruised in packing. In size and shape it is very much like that well known variety Sir Joseph Paxton. It was raised by crossing King of the Earlies and Noble, but here it is more like a large Paxton, and in my opinion is much superior to either of its parents. I consider this one of the best, if not the very best, variety ever raised by the late Mr. T. Laxton of Bedford, either for growing under glass or in the open air.—J. SMITH, *Mentmore, Bucks*.

— **CLEMATIS MONTANA.**—The pure white Jasmine-like flowers of this fine old Clematis are now just unfolding their beauty, in those instances in which the plants are grown in warm sunny positions. This plant is a perfect gem among creepers for covering high walls, buildings, or arches. It is perfectly hardy, grows rapidly, and with proper treatment flowers abundantly each year. In dealing with young plants, the shoots should be laid in regularly from 4 to 6 inches apart, over as wide a space as they will cover, the whole length of growth made up till the end of July being retained in each succeeding year till the allotted space is covered, afterwards, by pinching the young growths to within a couple of inches of their base, a mass of spurs studded with flower buds is formed; but to have these buds properly ripened, it is important to stop the young shoots before they have grown into an entangled mass, otherwise improper ripening will prevent free flowering.—H. DUNKIN.

— **DESTROYING SLUGS.**—There are many recipes for destroying slugs and snails, but the "Revue Horticole" adds another. This is to place on the ground, around anything sown or planted, a thick cord impregnated with sulphate of copper. Simple contact with the cord so treated causes the death of all insects with a soft or slimy body.

— **DEATH OF MR. JOHN HALLIDAY.**—Our Scottish readers will learn with regret of the death on the 18th inst., at Middle Claydon, Winslow, in his 88th year, of Mr. John Halliday, formerly gardener to the Earl of Mansfield, at Scone Palace, Perthshire. Mr. Halliday was many years at Scone, and was well known to horticulturists in Scotland.

— **JOHNSON'S GARDENERS' DICTIONARY.**—We have received Part 8 of the above-mentioned book, which completes the new and enlarged edition, published by Messrs. G. Bell & Sons, York Street, Covent Garden, W.C. As previously mentioned the work has been thoroughly revised. A list of "words with their meanings most frequently used as specific names" adds to the value of this desirable publication.

— **A FINE OAK.**—A correspondent writes:—"I was walking the other day with my son in Hampton Court Home Park, and we came upon an Oak tree of unusual size. Happening to have a ball of string with me we measured it, with the following result. In circumference, 37 feet; diameter, 13 feet 5 inches and 10 feet 7 inches. The tree is hollow, but with plenty of vitality in its branches. The measurement was taken about 4 feet from the ground."

— **SEAKALE ROOT CUTTINGS.**—Last January Mr. Herrin of Dropmore kindly gave me a fine well-developed Seakale root, grown from a cutting. This, with the side roots attached, I used at the end of February for the purpose of illustrating lectures on Seakale culture. I planted the root after being divested of its several side roots in my garden temporarily for use again during the past week, and also the root cuttings. These, of nearly the dimensions of my little finger, being lifted I found had not only callused over at the top, but had formed crowns, while no roots had yet been formed, but were evidently on the point of breaking; these not so much from a callus as from the ring which divides the softer bark, which is about the eighth of an inch thick, from the centre or woody substance of the stem. The crowns, however, have been formed so densely that I can count from twenty to thirty distinct. That fact shows not only the importance of starting crown growth before final planting, but also of thinning the crowns.—A. D.

— **BROCCOLI AND EARLY POTATOES IN CORNWALL.**—We learn from the "Western Morning News" that the Broccoli season in Cornwall has not been a very profitable one. The crop was very promising, but the sharp frost after Christmas played havoc with the plants, and it is estimated that nearly 50 per cent. were injured. Large numbers of these damaged and consequently inferior Broccoli were included among the crates sent to the great markets, and this fact alone, it is believed, has had a good deal to do with the low prices which have been since realised. Prices have been very low, averaging somewhere about 4s. a crate, containing roughly six dozen Broccoli, and latterly the figure has been as low as 3s. It is a gratification to know that there is every promise of an early and plentiful Potato crop for West Cornwall. The young plants are looking healthy, and unless a sharp frost sets in the gardeners will receive some compensation for a poor Broccoli season.

— **DAFFODILS DESTROYED BY HAILSTONES IN IRELAND.**—Mr. Bedford writes me from Straffan, Co. Kildare:—"The Daffodils were really fine, but they were all destroyed at their very best. On the afternoon of the 3rd inst. we had a terrible thunderstorm accompanied with hail; it lasted nearly an hour. Large three-cornered pieces of ice, heavy as marbles, which did not leave a perfect bloom in the place. Many had their trumpets cut off, and all had their petals shot away. There was a glorious bed of Emperor, only open two days; they were nearly 3 feet high, with leaves 2 inches wide." I sympathise with my old friend. This storm, which we happily escaped, was preceded by a remarkable celestial phenomena on the night of March the 30th. Clouds of luminous vapour rolled up from the north to the zenith, giving the appearance of a broad belt of pale, flickering fire in the heavens. The effect, which continued for some hours, might be described as weird. The light caused by this was equivalent to the full moon, but no shadow was thrown, giving one an uncanny feeling. The preceding and succeeding nights were dark.—E. K.

— **THE April number of the "Botanical Magazine" contains illustrations of Begonia scabrida, Veronica cupressoides, Aindephopallus Ellioti, Trichopus zelanicus, and Lowia maxillaroides, with the usual explanatory annotations.**

— **THE CUCKOO AND NIGHTINGALE.**—Mr. A. Alderman, Effingham Hill, Dorking, writes:—"The cuckoo was heard here on the 7th inst., being a fortnight earlier than last year; and the Nightingale on the 9th. Bats also have been seen flying about, all showing the prospects of an early season, even for this usually cold district, being at an altitude of 700 feet above sea level."

— **TECHNICAL EDUCATION.**—We learn from "Nature" that the Technical Instruction Committee of the Cheshire County Council have set aside £5000 towards an agricultural college in Cheshire, and £1000 for the furnishing of it. The Royal Agricultural Society of England have promised the sum of £1000 towards the fund, and an offer of £500 has been received from a private donor. It is thought that £11,000 would be required for the college, and £1000 for its equipment.

— **HAILSTONES IN AUSTRALIA.**—An Australian contemporary to hand states that "Angaston, S.A., was visited in March by a hailstorm of unprecedented violence. The hurricane extended in width for a mile and a half to two miles in the very heart of the orchards and vineyards. Some of the hailstones weighed a quarter of a pound, and perforated roofs, broke the glass in the houses, stripped the foliage from the vegetations, and beheaded unfortunate sparrows. The recreation grounds presented a solid mass of hailstones as large as marbles, the whole being a foot in depth. Apples covered the ground in all directions. Vegetables were hammered into salad."

— **IPOMŒA WOODI.**—This is a new species of Bindweed which has lately been introduced to Kew from Natal, and which is likely to become a favourite garden plant. Mr. W. Watson informs the "Garden and Forest" that it was discovered in Zululand by Mr. Medley Wood, the Curator of the Botanic Garden at Durban, who sent living examples of it to Kew, and described it as a handsome species with a tuberous root, a perennial woody stem, handsome, heart-shaped, purple-tinted leaves 6 inches long, and short-stalked clusters of large, handsome, bell-shaped, rosy purple flowers. The plants at Kew are growing freely, and they look likely to flower this year. Mr. Wood saw specimens with stems 40 feet long, "the naked stem lying on the ground and producing a quantity of fine foliage." This suggests something in the way of *I. Batatas*, commonly known as *Batatas paniculata*, one of the most widely distributed of all *Ipomœas*, and one of the very best of all summer climbers for the warm house.

— **HOOKE'S "ICONES PLANTARUM."**—The continuation of this important work is carried on by the Trustees of the Bentham Fund for the Promotion of Botany, under the editorship of Professor D. Oliver, F.R.S. It consists of figures of a selection of novelties from the Kew Herbarium. Each volume contains 100 plates, from drawings by the late Mr. W. H. Fitch and Miss M. Smith, with descriptive letterpress, and is issued in four parts, at about quarterly intervals. The sale is entirely in the hands of Messrs. Dulau & Co., 37, Soho Square, London, W. The third series, consisting of vols. xi.-xx. of the entire work, is now offered at the reduced price of £5. Three volumes of the fourth series have appeared, price 16s. per volume. Volume xvii. contains Ferns only, and xxi. and xxii. are entirely devoted to Orchids. The others illustrate a great variety of curious and rare plants; the later volumes the novelties, more especially of recent explorations in China, Africa, and Borneo.

— **THE DROUGHT AND CROPS.**—A daily contemporary recently remarked, "While we are congratulating each other on the 'wonderful weather we are having,' the farmer is beginning to look very grave indeed. The ground is baked by the hot sun, and dry as powder; the water everywhere in the country is getting low, and the prospect, both of hay crops and general harvests, will be seriously endangered if the rain does not come very soon. In France things are even worse, and agriculturists are nigh unto despair. 'The Vines and the fruit trees,' writes a French authority on agricultural matters, 'are magnificent. The bloom is in excellent condition, and there is every prospect of grand crops—if rain comes soon, and in plenty. After the terrible drought of the last two years pasture land is poor, to begin with, and if things do not change before many days are over, the cattle that escaped premature death in the last drought will also have to be sacrificed, and sacrificed at a cruel loss to the farmer.'" The rain which has fallen during the past few days has been welcomed in the south.

— ZONAL PELARGONIUMS FOR WINTER FLOWERING.—I read with interest "Sassenach's" note on page 276, but cannot agree with him in not making the soil firm at the final potting. It is a well known fact that if they, as well as most other similar plants, are not potted in firm soil they make a soft growth, which invariably fails to become sufficiently ripened. By potting them firmly they make harder, short-jointed growth, consequently the plants are not only much dwarfer but the blooms are not nearly so subject to damping as when the other method is pursued.—CMYRW.

— SHIRLEY AND DISTRICT GARDENERS' AND AMATEURS' MUTUAL IMPROVEMENT ASSOCIATION.—At the last monthly meeting Mr. J. T. Keen of Southampton read an instructive paper on the Auricula, and as he had staged a brilliant group of show and alpine varieties to illustrate his essay, great interest was evinced by the audience. Mr. H. Adlem, Southampton; Mr. A. Veale, Shirley; Mr. T. Meredith, Shirley; and Mr. B. Ladhams also exhibited plants; Mr. J. Miles, Southampton; Mr. T. E. Wilcox, Aldermeer; and Mr. T. Mill, Shirley, showing cut blooms. In addition to which there was a good display of Polyanthus and hardy perennials from the well-known nursery of Mr. B. Ladhams. Mr. W. F. Perkins, Portwood House, Southampton, having kindly offered to give a lecture at the June meeting on "The Composition of Artificial Manures and the Limits to their Economical Use in the Garden."

— DOUBLE PRIMROSES.—I have to thank Mr. Arnott (page 279) for his kind reply to my recent note respecting these plants. It was, I am sorry to say, the only one, and rather leads to the inference either that double Primroses are little grown or little known generally. The three varieties alluded to by Mr. Arnott, as Brilliant, Original, and Harlequin, are doubtless the old Crimson Purple, a profuse bloomer, commonly in clusters, and has small smooth leafage; Croussei, and Platypetala plena, or Arthur Dumollin, with which forms the descriptions tally. Mr. C. W. Smith told me recently that this latter variety bloomed profusely at Leonardslee, Horsham. The blush form came to us originally from Ireland, and I have no doubt but that some scarce forms here are to be heard of in that humid country in fair abundance. Double Polyanthus are at the best poor flowers, and should be regarded solely as curiosities. Golden Ball is a somewhat yellow edged form, and Rex Theodore is a crimson self. I have never met with a wild double Primrose, and can only assume that doubles have come from garden forms exclusively, and after long and patient selection. Having raised tens of thousands of singles of all colours, and of Polyanthus also, I have never met with a double or one that looked like a breeder. If now and then a flower showed a tiny petal bursting from the thrum, certainly it never got beyond that. Doubles in Primroses, like doubling in Chinese Primroses, seems to come seldom, and in cycles. Both however, are rare. In Polyanthus many persons who have found hose-in-hose flowers in their stocks have termed these doubles. That is, however, an error. They are duplex, but still are fertile, whilst true doubles are non-fertile.—A. D.

BROCCOLI AND CABBAGES.

SEEING that many of the readers of the *Journal of Horticulture* are comparing notes anent their fortune or misfortune with two very important crops for the gardener during the winter and spring months of the year, I herewith send you a few notes that I have taken after reading your correspondents' remarks. It may be well to state that the soil here is a tenacious clay, aspect south-east, elevation 550 feet above sea level.

The varieties of Broccoli planted last year were Purple Sprouting, Model, Leamington, Dickson's Late May, and Methven's June. As in many other parts of the country the weather here for about nine days in the early part of January was very cold, sharp frost and keen east wind, with the result that Leamington and Model Broccoli, planted in the most exposed part of the garden, were severely crippled, and about two-thirds of them were ultimately useless. On the other hand Purple Sprouting, Dickson's Late May, and Methven's June were quite unharmed, and are now giving a constant supply of good heads, while Methven's June gives a good promise for later use.

The seeds of Cabbages were sown the third week in July, and the seedlings transplanted to their permanent quarter the first week in October. The varieties were Nonpareil Improved, Clibran's Tender and True, and Enfield Market. They are now hearting well in the following order:—Nonpareil Improved, of two hundred plants fully one-half are fit for use, and not one bolted. Clibran's Tender and True, of five hundred plants many are fit for use, and only two bolted. Enfield Market, five hundred plants, not so forward as the other two sorts, and so far ten have bolted.—D. BOWEN, *The Gardens, Plas Dinam, Montgomeryshire.*

AFTER what we have been reading respecting the effects of a very short, if exceptionally severe, spell of frost last winter on Broccoli south and north, it seems very difficult indeed to class these as hardy vegetables. Cannot raisers produce something that shall be as useful and much hardier? It is so very disappointing to see breadths of fine Broccoli destroyed wholesale ere they can be utilised. Are not these plants hardier and less injured on breezy uplands than they seem to be in enclosed gardens?—D.

I AM afraid many market cultivators are suffering very much from the effect of the mild winter and dry spring—that is, as far as their Cabbage crops are concerned. I notice in the majority of fields throughout the county of Kent the per-centage of seeding Cabbages appears unusually large, especially is this the case where the soil is light and dry. The "bolting forms" give a rather novel appearance to the fields. I should think in some cases quite 30 per cent. have "bolted," which must prove a serious item in the returns. No doubt the seeds were sown at the usual time, and in an ordinary season would have produced good Cabbages. I suppose in this particular respect we shall always be at the mercy of the weather. The mild autumn enabled the plants to make an extra growth, which the winter failed to retard; thence following this, the dry weather of the early spring no doubt gave them, the desired check. On the clays of Essex this bolting is not so noticeable.—J. B. R.

HEARING on all sides complaints of the bolting of Cabbages this season, I wish to add my testimony to the value of Ellam's Early Dwarf for early use. I have at the present time a bed, 18 by 9 yards, the Cabbages being planted a foot asunder, presenting a most even appearance, not one having bolted. All are developing white hearts, some as hard as a cricket ball, and I have been cutting during the past fortnight, being a month earlier than last year. The seeds were sown on July 31st last, and the plants put out on the ground, previously occupied by Onions, at the end of September.—A. ALDERMAN, *Effingham Hill, Dorking.*

ROYAL METEOROLOGICAL SOCIETY.

AT the meeting of this Society held on Wednesday evening, the 18th inst., at the Institution of Civil Engineers, Great George Street, Westminster, Mr. Richard Inwards, F.R.A.S., the President, delivered an address on some phenomena of the upper air. He said that there are three principal ways in which the higher atmosphere may be studied. First, by living in it on some of the great mountain chains which pierce many miles into the air in various parts of the globe; second, by ascending into it by means of balloons; and third, by the study of the upper currents as shown to our sight by the movements of the clouds.

After describing the effects of rarefied air on animal life and natural phenomena, Mr. Inwards proceeded to give an account of various balloon ascents which had been undertaken with the object of making meteorological observations. In 1850 Messrs. Barral and Bixio, when they had ascended to 20,000 feet, found the temperature had sunk to 15° Fahr., but this was in a cloud, and on emerging from this, 3000 feet higher, the temperature fell as low as minus 38°, or 70° below freezing point. In 1862 Mr. Glaisher and Mr. Coxwell made their famous ascent, when they reached an altitude of about seven miles from the earth. A short time ago a balloon without an aeronaut, but having a set of self-recording instruments attached, was sent up in France, and from the records obtained it is shown that a height of about ten miles was attained and that the temperature fell to minus 104° Fahr.

Clouds are simply a form of water made visible by the cooling of the air, which previously held the water in the form of invisible vapour. Every cloud may be regarded as the top of an invisible warm column or current thrusting its way into a colder body of air. After referring to the various classifications and nomenclatures of clouds, of which that proposed by Luke Howard in 1803 is still in general use, Mr. Inwards said that whatever system of naming and classifying clouds be adopted, it should depend on the heights of the various clouds in the air, and he gave a few rough rules by which the comparative altitudes of the clouds may be judged when there is no time or opportunity to make exact measurements. Among the indications by which a cloud's height in the air may be gathered are its form and outline, its shade or shadow, its apparent size and movement, its perspective effect, and the length of time it remains directly illuminated after sunset. By the last method some clouds have been estimated to have been at least ten miles above the surface of the earth. The cloud velocities at high altitudes have been carefully noted at the Blue Hill Observatory, Mass., U.S., and show practically that at about five miles height the movement is three times as fast in the summer and six times in the winter as compared with the currents on the earth's surface.

After showing a number of lantern slides illustrating the various types and forms of clouds, the Aurora borealis, and rainbow, Mr. Inwards concluded his address by urging the desirability of establishing a good cloud observatory somewhere in the British Isles.

At the close of the meeting the Fellows and their friends inspected the exhibition of instruments, photographs, and drawings relating to the representation and measurement of clouds, which had been arranged in the rooms of the Institution. A lantern display of slides showing cloud effects and other meteorological phenomena was also given.



DENDROBIUM EURYALUS.

At the meeting of the Royal Horticultural Society, held on March 27th, Messrs. J. Veitch & Sons, Royal Exotic Nurseries, Chelsea, exhibited a plant of *Dendrobium Euryalus*, for which a first-class certificate was awarded. This is a hybrid, being the result of a cross between *D. nobile* and *D. Ainsworthii*. The illustration (fig. 52, page 315) represents a flower of this Orchid, having been prepared from a sketch taken on the above-mentioned occasion. The sepals and petals are bright rosy mauve, as is the front lobe of the lip. Dark rich crimson is the characteristic colour of the throat, which has also a distinct white margin.

EPIDENDRUM ELLISI.

The accompanying illustration (fig. 53) represents a raceme of *Epidendrum Ellisi*, a new species, which was exhibited at the Drill Hall, Westminster, on the 10th inst. by Welbore S. Ellis, Esq., Hazelbourne, Dorking. The specimen shown attracted some attention, being of a pleasing colour. The sepals and petals are a bright rosy mauve shade, the lip being lilac passing to nearly white at the edge. This species is said to have been introduced from Columbia, and has been named by Mr. Rolfe of Kew. A first-class certificate was awarded for this *Epidendrum* by the Orchid Committee of the Royal Horticultural Society on the occasion mentioned.

A WORK ON ORCHIDS.

MM. TH. AND E. DURAND, of Brussels, are preparing for publication, with the assistance of other orchidologists, a "Census Orchidearum." "Nature" says: "In this work will be enumerated about 8000 species of Orchids, with their synonyms, spontaneous or cultivated varieties, and natural or artificial hybrids. For each species will be given the place and date of first publication, a reference to the figures, and the geographical distribution. The work will probably extend over more than 1000 pages, and is intended to be published in five fascicules, at 6 francs the fascicule to subscribers."

BLETIA HYACINTHINA.

NOTWITHSTANDING that this *Bletia* was introduced nearly a century ago, it still retains a prominent position in many collections of choice Orchids. That it deserves this distinction there can be no doubt, for when seen at its best a plant laden with blooms presents a charming appearance. The flowers vary somewhat in colour from pale rosy purple to a dark shade, and are borne on scapes about a foot or so in height. *Bletia hyacinthina* is comparatively easy to grow, thriving well in a cool temperature. So far as my experience goes it should be grown in a pot, using a compost of fibrous peat, loam, leaf soil, and sand, providing ample drainage.—C.

PHALÆNOPSIS CULTURE.

No genus of Orchids can surpass this for the magnificence of its flowers, or for the grace and elegance with which these are displayed. Their culture can hardly be called difficult, but they require care and watchfulness, or good results will not be attained. To keep *Phalænopsis* in health the roots must be firmly adhering to something or another, and though they cling more tenaciously to wood than to anything else it does not follow that it is the best material to use, for when this decays it will be found that the roots will not take kindly to a new block or basket. Pots are of course more lasting, and plants grown in these do not suffer so much when repotted as do others cultivated in wooden receptacles of any kind; partly because with the latter it is very difficult to detach the roots, while with the pots a tap with the hammer and a little careful manipulation is all that is necessary, and also because the roots that have been growing among the potsherds will more readily take to their new home.

The pots should be nearly filled with clean drainage, and the plants placed on this with a little sphagnum about the roots, the amount of moss used being in proportion to the habit of the species. Strong growers such as *P. amabilis* and *P. Schilleriana* require more moss than such small growing plants as *P. Lowi* and *P. Esmeralda*, but even the strongest roots cannot endure being deeply embedded in moss, and potsherds or charcoal must always be freely intermixed.

The leaves of *Phalænopsis* are very sensitive and susceptible to

checks owing to sudden changes in the atmosphere, no matter whether the plants are growing or at rest; in fact, the latter period is the more trying to the grower, and many good leaves are produced in the summer which for want of proper consolidation by light and air, or from other causes will be lost in the winter, and a season's work has to be gone over again. This must be guarded against by judicious summer and autumn treatment; a well-balanced atmosphere as to air, heat, and moisture should always be maintained, the shading being gradually increased as the season advances, and similarly diminished as the days shorten, and any excess of fire heat at night carefully avoided. Thus the plants will obtain natural and regular periods of growth and rest, and no undue excitement at any time.

With regard to watering at the roots always be guided by the growth; if this is active, water freely, but let the roots have an occasional drying in the middle of the day. When the growth is complete gradually diminish the supply, and be sure they are quite dry before more water is given, until in the middle of the winter scarcely any will be needed, the little moisture in the atmosphere keeping the leaves plump. *Phalænopsis* must not be heavily watered on the foliage at any time, and when in active growth a light spraying from the syringe is all that is required, even on the hottest days. Insects are not usually very troublesome, and may be kept in check by ordinary vigilance.

ORCHIDS AT SALISBURY.

A VISIT to the gardens at Harnham Cliff, the residence of Capt. Greenwood, is always well repaid, and to anyone interested in Orchids it will be especially so at the present time. The houses devoted to these plants are extremely attractive, owing to the number of species in flower and their healthy appearance.

Some good specimens of various *Cypripediums* are arranged in an intermediate house, among the most noteworthy being a very fine plant of *C. bellatulum*, having twelve vigorous growths with foliage of great substance, and bearing three spikes all twin flowered. There is also a grand form of *C. Lowi*, with spike bearing three flowers, each upwards of 7 inches across. The petals are light green tipped with mauve, and having several chocolate spots near the base. The dorsal sepal is light and the pouch of a dull bronzy green. This latter is a newly imported plant, and when thoroughly established will no doubt prove a valuable variety. *Cypripediums* *Sedeni*, *Schlimi*, *callosum*, *concolor*, and *Boxalli* are also in flower; while *C. Chamberlainianum*, *C. Curtisi*, *C. Lawrenceanum*, *C. Rothschildianum*, and others are showing strong spikes.

Dendrobiums are represented by well flowered plants of *D. Ainsworthii*, *D. Brymerianum*, *D. densiflorum*, *D. fimbriatum*, *oculatum*, a beautiful form of the old *D. nobile*, and the quaint little *D. pulchellum*. *D. Devonianum* is past, but as evidence of what it had been I counted on one pseudo-bulb over eighty withered flowers; and *D. crassinode Barberianum*, with pseudo-bulbs a yard in length, bore traces of recent floriferousness. *Cattleya Schröderiana* is in good form, as also is *Angræcum sesquipedale*, *Chysis bractescens*, *Maxillaria Harrisoniæ*, and *Oncidium ampliatum majus*, and the strongly scented *Dendrochilum glumaceum* is flowering freely.

Among the *Odontoglossums*, note must be made of *O. cirrhosum*, with a spike bearing twenty-two flowers; *O. Halli* and *O. luteo-purpureum*, with sixteen and fourteen respectively; and a singular form imported last season as *O. triumphans*, with the habit of that species, but with flowers more nearly resembling *O. luteo-purpureum*. *O. Cervantesi* and the variety *decorum*, *O. Edwardi*, and *O. pulchellum* are also in bloom, while *O. vexillarium* gives promise of a splendid show in the near future. In a low warm pit *Phalænopsis Stuartiana* and *P. Schilleriana* are evidently quite at home, and the same may be said of *Eulophiella Elizabethæ* and *Vanda teres*.

Orchids are by no means the only plants that are well grown at Harnham Cliff, but time will only allow of a passing reference to some truly magnificent *Cyclamens*, and Mr. A. Robey is to be congratulated on his success with these plants, which cannot fail to excite admiration.—H. R. R.

ORCHIDS AT RODWELL HALL, TROWBRIDGE.

THE two houses devoted to Orchids in Mrs. Goldsmith's well-kept gardens are always interesting, but at the present time *Odontoglossums* now claim most attention. Mr. George Pymm has often proved himself a strong rival among district growers in competition, the general excellence of the plants proving him to be an enthusiast, as well as a successful cultivator.

Among the *Odontoglossums* in flower are two forms of *O. Cervantesi decorum* growing in a pan, one being the ordinary, the other a vastly superior variety. The flower of the latter is heavily spotted, of large size, and handsomely shaped. The same

contrast is apparent in the case of *O. Rossi majus*, of which there are several plants; but one has flowers with an expanse of quite 3 inches, and the lip $1\frac{1}{4}$ inch in width. Of *O. Pescatorei*, too, there is a good selection of forms and colours, some very handsome and distinctly marked. *O. triumphans* has a spike on one plant with five very fine and beautifully marked flowers. Only one plant of *O. hystrix* is grown, but this is very conspicuous, and much value is set upon it by owner and grower alike. *O. pulchellum* and *O. p. majus* are flowering freely, and the plants appear extremely healthy. *O. maculatum* is represented by two plants, each distinct in spike and flower. Naturally *O. Alexandræ* is given due prominence, and as is always the case, variations are common in the colour and character of the blooms and spikes. There is one pure white form with a good spike fully open, and a succession will be kept up for some time by others still in bud. One fine plant of

among those persons who visit Rodwell Gardens and local exhibitions.

Cypripediums are not extensively grown, but they comprise some good varieties which flower freely. *C. Sedeni candidulum* has been flowering since November, *C. callosum*, *C. villosum aureum*, *C. hirsutissimum*, *C. caudatum*, *C. concolor*, *C. longifolium*, *C. Lawrencianum* (a particularly good form), *C. bellatulum* (which does well), and *C. barbatum superbum* are all in excellent health and condition. *Vanda suavis* had two strong spikes bearing ten and thirteen flowers respectively, and another had a similar display, but quite distinct.

All the plants reflect much credit on their grower, and the excellence of the equipment of the garden shows that no expense is spared to maintain everything in the best order.—W. S., Trowbridge.



FIG. 53.—EPIDENDRUM ELLISI.

O. constrictum is noteworthy, and another of *O. Halli* has finished flowering. *O. gloriosum* is developing four strong spikes from two growths, and another had a similar number, with much smaller, though equally pretty, flowers.

Oncidiums, though less numerous, make a display. Those in flower and bud are *O. altissimum*, *O. pulvinatum majus*, *O. ampliatus majus*, *O. splendidum*, *O. incurvum*, and *O. macranthum*. These are conspicuous by the vigour of their spikes and the healthy condition of the plants. A large specimen of *Cymbidium Lowianum* is carrying five of its long, arching spikes of bloom in the cool house, and adds greatly to the richness of the display of bloom. The *Cattleyas* are not at present making a brilliant show; but during the season there is evidence that quality and quantity will not be wanting. *C. Skinneri* promises well, and a few flowers have already opened. *C. intermedia* is the most prominent variety in bloom. *C. Mendelli*, *C. Mossiæ*, *C. labiata*, *C. gigas*, *C. Gaskelliana* will make an extensive show during the summer. The plants are large and healthy, and the superior forms are well known

MASTERING THE ONION MAGGOT—A REVIEW.

IF in the multitude of councillors is wisdom, this will be found in many able communications that have appeared in the *Journal of Horticulture* on the above subject. Writer after writer has recorded his experience in combating and conquering the enemy that has ruined so many Onion beds. The Onion crop is an important one, and its failure means grave inconvenience and often great loss. In some districts we are told that Onions can scarcely be grown in consequence of the ravages of the maggot—the larvæ of the Onion fly—and we are also told that Onions are imported into this country to the extent of upwards of 4,000,000 bushels yearly. This ought not to be, for every year we see home grown Onions as large and in every respect as good as the best that arrive from other lands.

In most instances in which gardeners have been successful in the production of full crops of sound, clean Onions, stress is laid on deep cultivation and liberal manuring in the autumn. That

seems, generally speaking, to be a condition precedent to the accomplishment of the object in view, the bulk of the manure being placed a foot and more below the surface. The upper layer of soil is naturally the most fertile, and is further enriched by spring and summer dressings, which the plants enjoy or their enemy detest, or both. Among the methods that have proved effectual in mastering the Onion maggot are the following, and a brief summary of them will be convenient for comparison and ease of reference.

1, The free application of soot previously to sowing in the open, also immediately the plants appear, and at frequent intervals afterwards as the rains wash it into the ground.

2, Sowing in boxes in frames about the end of January, protecting from frost, and planting the sturdy seedlings early in April in well prepared ground, dressing with soot or chemical manures.

3, Sowing the varieties that are usually raised in the spring in the autumn, at the same time and in the same manner as raising Tripoli Onions; dressing with a mixture of softsoap in solution and petroleum after planting in the spring.

4, Applying gas lime in the autumn at the rate of a handful to the square yard or more and digging in; applying soot before sowing; again when the plants appear, and subsequently at fortnightly intervals.

5, Applying a mixture of soot, superphosphate of lime, and nitrate of soda when sowing; again when the plants appear, and at intervals subsequently.

6, Removing all affected plants from the land; mixing a pint of petroleum in three-quarters of a bushel of the dry ashes from burnt garden refuse, applying at the time of sowing, when the plants appear, and successionaly.

7, Sowing very early in the open (in January if possible), covering the seeds with fresh wood ashes, and dressing with them when the plants appear, and occasionally afterwards.

8, Applying a mixture of soot and lime in preparing for sowing—a bushel to a rod, trodden in to firm the ground; dressing with soot when the plants appear, and repeatedly, the lime liberating the ammonia from the soot and driving away the fly.

9, Sowing as soon as the ground is in good condition; when the plants appear dressing with crushed nitrate of soda, 1 oz. to the square yard, subsequently applying soot and basic slag.

10, In light soil; trenching, and applying cow manure in the autumn; treading firmly before sowing, in February or early March; when the plants appear, sprinkling with a mixture made by dissolving softsoap at the rate of 1 to 2 ozs. to a gallon of boiling water, and incorporating by agitation a pint of petroleum to 10 gallons; used every few days for six weeks.

11, Saturating dry sand with petroleum, and strewing on the beds when the plants appear, repeating subsequently.

12, Autumn trenching and manuring; spreading the ash from burnt garden refuse an inch thick before drawing drills for sowing; sooting when the plants appear, and at frequent intervals afterwards, also dressing with chemical manure and hoeing after each dressing.

13, Dusting very lightly with finely powdered gas lime when the plants appear, and about every ten days afterwards.

14, Dusting when dew is on the plants with a mixture of 14 lbs. each of nitrate of soda and guano, a peck of soot, and a barrowful of wood ashes, repeating at intervals.

The above are in brief the measures that proved successful by those who resorted to them, though some, if not all, may have failed in other hands.

Two cardinal deductions that seem to accrue are these—

1, Having the plants as strong as possible when the fly emerges; 2, Applying something that may be repulsive to it *early*, that is, *before* the flight for egg deposition. If this can be averted then there can be no maggots; neither, of course, could there be any if the enemy could be destroyed in the pupa state in the soil.

Gas lime has been said to effect this applied in the autumn; but it has to be remembered that gas lime is like some medicines—beneficial in proper mixtures and doses: in excess dangerous—poisonous.

Trenching ground that has been occupied with infested Onions, burying the upper 6 inches say 18 inches deep, as suggested by a correspondent, is doubtless a prudent course, and a gardener of fifty years' experience has stated that by adopting that practice for a few years he buried the enemy, and had no more trouble with the maggot; but he had no near neighbours to raise fresh swarms of insects to infest the locality.

Every person who allows infested Onions to remain on the ground, and takes no steps to banish the enemy, is himself an enemy—a nurturer and preserver of a scourge that ruins not only his own (for that would serve him right), but his neighbours' crops.

Reverting to early plants and early spring dressings, the earlier

the plants the stouter the cuticle, and the less easily pierced by the newly hatched maggots. This anyone can determine by placing eggs round the stems of plants that have stood through the winter, also round young spring-raised plants.

Many persons in judging cottage gardens last year found, in numbers of cases, spring sown Onions devoured, while a row or two of autumn raised plants by the side of them had formed good bulbs, as a rule, though there were some exceptions. Plants from January or February sowings under glass also, as a rule, suffered much less than plants sown in the open late in the spring.

Where the maggots take possession of Onions it is difficult, if not impossible, to destroy the enemy without destroying its habitation. Many persons resort to remedial measures too late and fail, then say "nothing is of any use." Before adopting this policy of despair, let them try earlier action. It is a question of the men being in advance of the fly, instead of the fly being in advance of the men. Last year the enemy by its early emergence stole a march on hundreds of persons and conquered. Let them renew the contest on the lines suggested by victors in the combat between insect instinct and human intelligence.

It may interest many readers of this paper to hear that the flies are hatching fast from the pupa in which they have been hidden during the winter. I have caught two dozen this morning (April 21st) upon our Onion plot, and no time should be lost in applying dressings of soot and lime or kerosene emulsion to scare the marauders.—EDWARD H. SMITH.

ROYAL HORTICULTURAL SOCIETY.

APRIL 24TH.

SELDOM has the Drill Hall, Westminster, been so well filled as it was on this occasion. Apart from the Exhibition of the National Auricula and Primula Society, a report of which appears elsewhere in this issue, other plants were well and extensively shown. Orchids made a very fine display, as did hardy flowers and greenhouse plants. Vegetables and fruit were fairly well represented.

FRUIT COMMITTEE.—Present: Philip Crowley, Esq. (in the chair), with Dr. Hogg and Messrs. H. J. Pearson, John Lee, J. Cheal, G. Taber, P. Veitch, T. J. Saltmarsh, A. Dean, C. Herrin, A. J. Laing, T. Glen, G. Hudson, H. Balderson, F. Q. Lane, J. Willard, G. Norman, W. Iggulden, G. Wythes, and J. Wright.

Among the chief products brought before the Committee on this occasion were forced plants bearing splendid ripe fruits of Laxton's Royal Sovereign Strawberry, and fruiting branches of the Frogmore Selected Tomato. We will, however, refer to the several articles in the order of examination.

Mr. Miller, gardener to Lord Foley, Ruxley Lodge, Esher, sent two large baskets of Mushrooms, the produce of one being grown in a house, the other out of doors, the latter the finer, though all were good, also a good dish of Brown Turkey Figs and a box of excellent Noble Strawberry. A bronze Banksian medal unanimously recommended.

At the last meeting Mr. Owen Thomas sent from Frogmore a dish of the *Frogmore Selected Tomato*, bright, well shaped fruits of excellent quality for the season. It was recommended that the variety be grown at Chiswick, a desire being also expressed that fruiting plants be seen for showing the bearing capacity of the variety in spring. Mr. Thomas consequently sent long stems laden with fruit in different stages of development, also a dish of ripe fruit. A discussion as to whether the fruiting of the plants at Chiswick should be awaited before making an award, but it was eventually decided that sufficient evidence of the value of the variety for forcing was forthcoming, and a first-class certificate was granted to it for that purpose.

Mr. G. Wythes, Syon House Gardens, sent a fine fruit of *Monstera deliciosa*, also a box of excellent Brown Turkey Figs, and a cultural commendation was awarded. Mr. Leach, Albury Park Gardens, sent a dish of Warkworth Castle Apple, a medium sized cooking Apple raised from Northern Greening. As it was not considered an advance on existing varieties no award was made. Mr. Leach sent very fine heads of Cabbage named Union Jack, much the shape but twice the size of Ellam's Early. The variety was recommended to be tried at Chiswick. Some plants of Offenhem Cabbage were sent from Chiswick. They were very dwarf with close shapely heads and few outer leaves, the specimens appearing to meet with general approval.

Mr. Crowley brought a glass jar of Plums, dried in his oven as described in the *Journal of Horticulture* of November 24th, 1892. Mr. Crowley then described his practice as follows:—

Ever since I saw Plums dried at Chiswick I have tried some at home. Last year I laid them on cardboard in the usual iron oven tray, but then they were too caramelised and tasted burnt. This year I made some wooden frames to fit the oven and formed trays of galvanised iron wire half-inch netting, and on this laid the Plums. This allowed the air to circulate freely between and under the fruit. When the cooking for the day was done and the oven was a reasonable heat these trays were put in and the door left a little open to help the current of air to pass through, and the fruit left there until the oven became too hot the following morning. This was repeated three or four nights, with the result of having good dried Plums at no

expense and no bother. Anyone with a surplus of Plums and a kitchen oven may do the same. We found one lot was not sufficiently dried, and began to mould; these we put in again for a night and saved, but with a little care, of course, one knows how dry to make them. I have also done Apples in the usual ring very successfully.

The variety exhibited on the present occasion was Rivers' Monarch, evidently one of the best for the purpose. The fruits had been stewed with a very little sugar, and were quite equal to the best cooking Prunes from France or elsewhere. A vote of thanks was unanimously passed to the Chairman for his useful object lesson in home-dried Plums.

Last but not the least feature of the proceedings was the award of a silver Banksian medal to Messrs. Laxton, Bedford, for the Royal Sovereign Strawberry plants above mentioned. They were not large, but rather small plants in 5-inch pots, nor were the fruits numerous, but two or three of the finest of them on each plant made a brave display. The largest fruit, though something like a double one, girthed $7\frac{3}{4}$ inches. The fruits were also fine in colour and firm, just such as Mr. J. Smith of Mentmore describes in another column (page 319), and a Strawberry or anything else *has* to be good before this excellent and cautious gardener will give it his commendation.

FLORAL COMMITTEE.—Present: W. Marshall, Esq. (in the chair), with Messrs. J. Fraser, O. Thomas, J. Laing, C. T. Druery, H. Herbst, Walter C. Hackett (Australian visitor), G. Stevens, H. B. May, C. T. Bause, W. C. Leach, R. B. Lowe, J. Jennings, T. G. Grey, J. Walker, H. Selfe Leonard, C. E. Shea, E. Beckett, H. J. Jones, W. Watson, T. Baines, J. D. Pawle, G. Paul, H. Turner, H. Cannell, R. Owen, and Rev. H. H. D'Ombraim.

Messrs. H. B. May, Dysons Lane Nurseries, Upper Edmonton, sent a collection of Ferns, and amongst these *Pteris reginæ*, *P. cretica* Mayi, *P. reginæ cristata*, *P. Victoriæ*, *P. serrulata gracilis*, and some *Adiantums* were conspicuous (silver Flora medal). Messrs. Barr & Sons had a very fine collection of hardy flowers, including Tulips, Narcissi, Irises, and Anemones. Especially good were *Tulipa retroflexa*, *T. elegans*, *T. Picotee*, *T. Clusiana*, *T. Darwiniana*, and such beautiful varieties as Golden Eagle and Golden Beauty (silver Flora medal). Mr. T. S. Ware, Hale Farm Nurseries, Tottenham, contributed hardy flowers in variety, but these could not be closely viewed whilst the Committees were sitting. Messrs. Hugh Low & Co. arranged a group of Hydrangeas as generally grown for market, and a large number of hardwooded plants (silver Flora medal). A fine effect was made by some plants of *Bougainvillea glabra Sanderiana*, all shown in $4\frac{1}{2}$ -inch pots by Messrs. F. Sander & Co. The plants were profusely flowered nearly to the base, and the blooms were richer in colour than the ordinary type, and a first-class certificate was awarded. The same firm also exhibited a brightly coloured *Coleus* named Mrs. F. Sanders, and *Alocasia Watsoniana*, a new species (first-class certificate). Lady Henry Grosvenor, Bulwick Park (gardener, Mr. T. J. Deanfield), sent sprays of *Syringa japonica*, a cream coloured Lilac; and Mr. R. Whyte, Pentland House, Old Road, Lee, staged a plant of the yellow *Richardia Pentlandi*.

Hardy flowering shrubs were splendidly represented, a large collection having been sent from the Royal Gardens, Kew. This contribution included *Staphylea colchica*, *Pyrus floribundus*, *Vaccinium amœnum*, *Camellia japonica* var. (grown outdoors), *Magnolia purpurea*, *Rhododendron indicum* var. *amœnum* and others, two of which are described below. A fine plant of *Streptocarpus Dyeri* sent from the same source attracted more than ordinary attention by reason of its bright rosy purple flowers. Messrs. J. Laing & Sons, Forest Hill, S.E., had a beautiful collection of *Gloxinias* tastefully arranged with Palms and *Adiantums*. The flowers were large and very bright in colour (silver Banksian medal). *Fuchsias*, *Cannas*, and cut blooms of *Tuberous Begonias* came from Messrs. H. Cannell & Sons, Swanley, Kent. The blooms of *Canna Queen Charlotte* were exceptionally fine. A number of alpine plants arranged in boxes from the Guildford Hardy Plant Nursery made a good effect, as did a huge bank of *Azaleas* sent by Messrs. W. Cutbush & Son, Highgate Nurseries, London, N. (silver medal). This firm also had hardy flowers in variety. F. S. Still, Esq., Wimbledon Park, showed *Amaryllises* and *Spiræas*, and from Lady Theodore Guest, Inwood House, Blandford (gardener, Mr. Wilkins), came blooms of *Alpinia nutans*, a showy Cape bulbous plant (first-class certificate), *Bauhinia purpurea*, and *Thunbergi Harrisii* (first-class certificate). Mr. James Pike, South Acton, had plants of *Carnation Uriah Pike*. Messrs. Paul & Sons, Cheshunt, sent standard *Roses*, hardy flowering shrubs, and a few herbaceous plants. The same firm secured awards of merit for *Canna Cheshunt Yellow* and *Exochorda Alberti*, and a first-class certificate for *Phlox canadense*, which is described elsewhere. Messrs. J. Veitch & Sons, Chelsea, exhibited hardy trees and some greenhouse plants for which awards of merit and certificates were adjudged.

Roses made a charming display, one side and end of the huge building being filled with these. Messrs. Paul & Sons, Cheshunt, had large bushy plants as well as standards, all remarkably well flowered. *Magna Charta*, *Catherine Soupert*, *Celine Forestier*, and *Camille Bernardin* were conspicuous amongst others (silver-gilt medal). Mr. C. Turner, Royal Nurseries, Slough, staged profusely flowered plants of *Crimson Rambler Rose* and some *Azaleas*, which are noticed elsewhere (silver Flora medal). Mr. W. Rumsey, Joyning's Nursery, Waltham Cross, sent *Roses* in pots and cut blooms, the whole making a good effect (silver Flora medal). *Roses* were likewise shown in splendid condition by Messrs. W. Paul and Sons, Waltham Cross, Herts. The best of these comprised fine plants of *Madame Sophie Stern*, *Claire Jacquier*, *Victor Verdier*, *Little Gem*, and *Princess May*. The cut blooms exhibited by this firm were

also bright in colour and fresh in appearance (silver Flora medal). J. C. Tasker, Esq., Middleton Hall, Brentwood (gardener, Mr. Perry), had *Roses* in pots; and Mr. F. Cant, Braiswick Nursery, Colchester, sent magnificent cut blooms. These included fresh and brightly coloured blooms of *Thomas Mills*, *Ulrich Brunner*, *La France*, and *Mrs. J. Laing* (silver Banksian medal). Mr. G. Mount, Canterbury, was represented by cut *Roses*, including a box of well grown flowers of *Mrs. John Laing* (silver Banksian medal). Four boxes of *Maréchal Niel* and one of *Niphetos Roses* were exhibited by Mr. J. Walker, Thame, Oxon, and were much admired (silver Banksian medal).

ORCHID COMMITTEE.—Present: Dr. Masters (in the chair), with Messrs. J. O'Brien, De B. Crawshay, H. M. Pollet, W. H. Protheroe, J. T. Gabriel, W. H. White, E. Hill, H. J. Chapman, T. Statter, H. Williams, J. Douglas, S. Courtauld, T. B. Haywood, A. H. Smee, and H. Ballantine.

As already mentioned, Orchids were finely exhibited. A. H. Smee, Esq., The Grange, Wallington (gardener, Mr. G. W. Cummins), sent a number of choice plants, including a *Phaius* and *Dendrobium nobile*, Smee's variety (award of merit). De B. Crawshay, Esq., Sevenoaks (gardener, Mr. S. Cooke), sent some splendid forms of *Odontoglossum crispum*, one named *Florie* being unusually fine (award of merit). From the Hon. Mrs. Foley, Fordingbridge, Hants (gardener, Mr. J. Moxham), came varieties of *Cattleya Mossiæ* and *C. Mendeli*, with cut blooms of *C. Schiödæ*. A plant of *Dendrobium Fortile* was also staged by the same exhibitor. Messrs. Sander & Co., St. Albans, arranged a charming group, amongst which were plants of *Cœlogyne Dayana*, *C. Swaniæ*, a new species (award of merit), *Cypripedium nitidissimum*, *Phaius Oweniæ* (award of merit), *P. Sanderianus*, *Oncidium phymatochilum*, and the pretty little *Lælia Oweniana* (silver Banksian medal). Cut blooms of *Dendrobium nobile* and *Cattleya Mossiæ* were sent by F. Gurney Fowler, Esq., and F. Wigan, Esq., respectively. The last named exhibitor also had a white form of *Cattleya Mossiæ* which attracted notice. Plants of *Cirrhopetalum Collecti* and *Phalænopsis tetraspis* (award of merit) were contributed from the Royal Gardens, Kew.

Messrs. B. S. Williams & Sons, Upper Holloway, staged a fine group of Orchids, comprising some choice species and varieties. Amongst others in this collection were *Odontoglossum triumphans*, *O. Edwardsi*, *Lycaste Skinneri* delicatissima, *Epidendrum radicum*, and *Miltonia stellata* (silver Banksian medal). Messrs. Hugh Low & Co., Clapton Nursery, had a small but attractive group of *Cattleyas*, *Dendrobiums*, and *Cypripediums* (bronze Banksian medal). Mr. W. Appleton, Weston-super-Mare, exhibited a fine plant of *Lælia cinnabarina*, for which a first-class certificate was awarded. Messrs. W. Lewis & Co., Southgate, Mr. P. McArthur, The London Nursery, Maida Vale, W., and Messrs. J. Veitch and Sons, also staged Orchids, but our reporter was not permitted to view the exhibits during the time at his disposal for descriptive purposes.

CERTIFICATES AND AWARDS OF MERIT.

Adiantum tenellum (H. B. May).—Apparently this is a free growing plant with fronds nearly as finely cut as those of *A. gracillimum* (award of merit).

Adiantum Schreideri (H. B. May).—A distinct species with finely cut pinnæ and moderately large fronds (award of merit).

Alpinia nutans (Lady Theodora Guest).—A Cape bulbous plant of an attractive appearance. The foliage grows erect to a height of nearly 3 feet, and the flowers are produced from the centre. The unexpanded flower is shiny white tipped bright pink, the inside when opened being red margined yellow (first-class certificate).

Alocasia Watsoniana (F. Sander & Co.).—The leaves of this plant are upwards of 2 feet in length and 1 foot in width. They are of a deep glaucous green shade with pale ribs, under side dark purple (first-class certificate).

Azalea Mr. Victor Savart (C. Turner).—This is a fine variety of *Azalea indica*, dark red, rich coloured single flowers (award of merit).

Azalea Lively (C. Turner).—An attractive variety, the flowers being double, and of a pale pink colour (award of merit).

Azalea Julia Vervaene (C. Turner).—A charming variety, dwarf in habit, and with semi-double pink flowers margined white (award of merit).

Azalea Perle de Ledeborg (C. Turner).—A large flowered variety, the blooms being 3 inches in diameter, white splashed rose (award of merit).

Bougainvillea glabra Sanderiana (F. Sander & Co.).—A profuse flowering form of this well-known plant. The specimens exhibited were from 18 inches to 3 feet in height, growing in small pots, and flowered to the base. The blooms are richer in colour than those of the type (first-class certificate).

Canna Cheshunt Yellow (Paul & Son).—A showy variety with rich yellow flowers, reddish in the centre (award of merit).

Cœlogyne Swaniæ (F. Sander & Co.).—This is a new species, and the flower spikes droop in a similar manner to those of *C. Dayana*. The sepals and petals are pale buff, the lip also being of that shade margined brown (award of merit).

Dendrobium nobile Smee's variety (A. H. Smee).—This is a good variety, the flowers being of a delicate shade, and yet attractive when produced in masses as on the plant exhibited. The sepals and petals are cream coloured tipped with rosy violet, the throat being dark crimson (award of merit).

Epidendrum radicum (B. S. Williams & Sons).—The flowers of this species are bright orange scarlet, paler in the centre (award of merit).

Exochorda Alberti (Paul & Son).—A charming flowering shrub with small white blooms borne in racemes (award of merit).

Lælia cinnabarina (W. M. Appleton).—This has a bright orange scarlet flower of medium size. The plant exhibited bore two spikes carrying a number of blooms (first-class certificate).

Miltonia stellata (B. S. Williams & Sons).—The sepals and petals of this are sulphur yellow, the lip being of a cream shade, spotted pale brown (award of merit).

Odontoglossum crispum Florie (De B. Crawshaw).—A very fine form, the flowers being large and densely spotted. The spike exhibited bore eleven flowers (award of merit).

Odontoglossum crispum Lowianum (Hugh Low & Co.).—A pretty and distinct form with medium-sized flowers, the rounded and crimped edges of the petals and sepals being a special feature (award of merit).

Phlox canadense (Paul & Son).—A dwarf growing alpine-like Phlox with bright blue flowers. The plant exhibited was growing in a pan (first-class certificate).

Phaius Owenia (Sander & Co.).—This is a new species, and although the flowers are smaller than others in cultivation they are attractive. The sepals and petals are reddish brown, the lip yellow at the base, with a purplish crimson lobe (award of merit).

Phalænopsis tetraspis (Royal Gardens, Kew).—A chaste species with moderately large flowers, the sepals and petals are white, as is the lip, a blotch of yellow in the throat (award of merit).

Primrose Evelyn's Beacon (J. H. Arkwright).—A very fine form of the common Primrose, flowers large and richly coloured (award of merit).

Rhododendron Rosy Bell (Royal Gardens, Kew).—This is a hybrid. The flowers and trusses are small, the former being of a rosy colour (award of merit).

Rhododendron rhombicum (Royal Gardens, Kew).—The flowers of this species are small, of a rosy lilac shade (award of merit).

Thunbergia Harrisii (Lady Theodora Guest).—The flowers of this species are large, of a rich blue shade (first-class certificate).

In addition to the foregoing we learn from the official list that the following awards were also made, but for reasons already stated we are unable to publish descriptions of the plants:—First-class certificates *Rhododendron Princess*, and *R. William of Wurtenburgh* (Messrs. J. Veitch & Sons); *Cypripedium Annie Measures* (B. J. Measures, Esq.); Awards of merit:—*Amaryllis Gem* and *Phyllocactus Romeo* (Messrs. J. Veitch & Sons); and *Oncidium sessile* (Messrs. W. Lewis & Co.).

LECTURE ON BOTANICAL EXPLORATION IN BORNEO.

At the afternoon meeting at the Drill Hall, on Tuesday last, Mr. F. W. Burbidge delivered an admirable lecture on this subject. The chair was occupied by J. T. Bennett-Poë, Esq.

Mr. Burbidge, in the course of his lecture on "Botanical Exploration in Borneo," pointed out the fact that the original English explorers of Borneo, from a botanical and social standpoint, were Sir James Brooke, better known, perhaps, as Rajah Brooke of Sarawak; Mr., now Sir Hugh Low, late of Perak; and Mr., now Sir Spencer St. John; and he mentioned that to them undoubtedly belongs the credit of making Borneo as interesting and as commercially important as it is to-day. To Sir Hugh Low especially belongs the credit of exploring the gigantic mountain lying inland from the north-western coast—viz., Kina Balu—for the first time; and it was hereon that he discovered the gigantic and curious species of Pitcher Plants (*Nepenthes*), that have been the admiration of botanists and horticulturists alike, since they were figured and described by Dr. J. D. Hooker in the Transactions of the Linnean Society of London some years ago. The lecturer then stated that his own inclination for travel in the tropics had been fostered by his having seen and read numerous classical works. Having decided to visit Borneo in 1877, he saw Sir Spencer St. John, the late Miss Marianne North, who had then recently returned from Sarawak, Dr. A. R. Wallace, and others who had been there, and then proceeded on his voyage, the record of which was published in 1880 under the title of "The Gardens of the Sun."

The Palm-thatched houses of Borneo are all built on piles, and no doubt closely resemble the Swiss Lake dwellings of Europe centuries upon centuries ago. Mr. Burbidge reached Borneo via Johore and Singapore, and after visiting the Lawas and Limbang and Pandarowan Rivers he made two journeys to Kina Balu, and a voyage to the Sulu Archipelago, which lays about midway between N. Borneo and Mindanao, the most southern point of the Philippine group. After describing the peculiar climate of Kina Balu and the vegetation found thereon, special mention was made of *Nepenthes villosa*, *N. Lowi*, *N. Edwardsiana*, *N. Harryana*, *N. Burbidgea*, and *N. Rajah*, the last-named, together with the two-spurred *N. bicalcarata*, having been introduced alive to English gardens. The Ferns of Borneo were described as being most luxuriant and often of a noble character, and Mr. J. G. Baker has published a list of more than fifty species which Mr. Burbidge collected in that island for the first time. Graphic descriptions were given of tropical vegetation—Palms and Cycads, Bamboos and Musas, or Plantains, Tree Ferns and Orchids, all free and beautiful in the open air in a land of eternal summer near the Equator, where winter is unknown. The lecturer also described the beautiful mystery of a tropical forest with its blue-green undergrowth, and the Orchids, the birds and monkeys, all up in the tree top at 100 feet to 200 feet overhead. The best collecting grounds were said to be the banks of the rivers, or margins of islets, and along the creeks or high up the mountains.

A short list of plants introduced alive by Mr. Burbidge includes *Nepenthes Rajah*, *N. bicalcarata*, *Jasminum gracillimum*, *Cypripedium*

Lawrencianum, *Pothos celatocaulis*, *Pinanga Veitchii*, *Aërides Burbidgei*, *Cryptocoryne caudata*, *Piptospatha insignis* and other Arads, *Phalænopsis Mariæ*, and *Burbidgea nitida*, a new genus named in compliment to Mr. Burbidge by Sir J. D. Hooker of Kew. In conclusion, the lecturer mentioned how largely our enterprising nurserymen had contributed to the introduction of new and rare garden vegetation, and expressed a hope that government facilities might be more generally accorded to duly accredited collectors, and he also expressed a hope that no great scientific expedition would in future be allowed to leave our shores without having a practical and efficient plant collector on board.

A vote of thanks to Mr. Burbidge for his interesting lecture closed the meeting.

THE WARMINSTER POTATO EXPERIMENTS.

AN article appeared on page 285 of your issue of April 12th entitled, "The Warminster Garden Experiments," and which purports to be a review, signed Alex. Dean, of the report recently issued by the Wilts Technical Education Committee on "Experiments with Potatoes and Onions in Warminster and District," and published by Messrs. Eyre and Spottiswoode.

As jointly responsible with Mr. E. H. Smith, the technical instructor of this district, for the subject matter of this report, I must ask to be allowed to call attention to the mode adopted by the reviewer. There appears in this article five apparent quotations from the report, each between inverted commas. Such of your readers as have not seen the original will be surprised to learn that not one of these quotations is correctly given. The distortions are not of themselves very material, except as showing the culpable carelessness of the reviewer. In addition to this he has, however, thought it worth while to invent a ridiculous sentence, to foist it upon the writers of the report with the words, "'If,' says the reporter," and to follow up his invention with a criticism of his own production. His own criticism upon his own invention is such a literary gem that I cannot refrain from reproducing it. It runs thus: "What virtue there is in an 'if,' but why should anyone have thought the 'if' had any virtue?" With these specimens of good taste and fairness I might leave this gentleman to the judgment of your readers, but there is worse to follow.

In the paragraph following the one above referred to the conclusions arrived at in the report with regard to deep cultivation are ridiculed on the ground that no mention is made of the fact that the effect of such cultivation probably lasts more than one year. It will scarcely be believed that this fact is expressly stated in the very next sentence in the report to that from which the reviewer has quoted. But not content with these feats of criticism, your readers are informed that the facts as stated in the report with regard to the weight of the produce on certain plots are "very hard to believe."

This suggestion of bad faith on the part of those responsible for these experiments, taken along with the instances given above, and with the fact that the whole article is in the nature of a caricature, removes it from the category of criticisms directed, as all criticisms should be, towards the elucidation of the points at issue. Whilst one would gladly welcome such helpful criticism there is only one course to adopt towards critics like the present, and that is to repudiate their insinuations, and leave them alone. But before doing so I cannot help asking with what object such an article could have been written? Certainly not in the interests of technical education in horticulture. I am informed, I hope incorrectly, that Mr. Dean is an instructor in gardening employed by the Surrey County Council, and that he has himself been carrying out some experiments in Potato culture, some account of which recently appeared in the papers.

With reference to the work in this district which has been done for technical education in horticulture of a practical and demonstrative sort (and no other sort of work is worth calling technical) let me ask your readers to refer for themselves to the report, the publication of which has led to this somewhat undue encroachment on your valuable space.—E. S. BEAVEN.

[It is right to say that Mr. Dean is not in the least responsible for the Potato experiments which he has ably assisted in carrying out.]

DULWICH PARK.

At no season of the year are the parks of London more highly appreciated than during the spring and early summer months, when the trees are bursting into leaf and the grass wears that fresh green hue which cannot be seen in the later months. Then, too, at this season many flowering trees and shrubs are in the height of their beauty; and the rockeries, with which most, if not all the parks, are provided and covered with such profusions of flowers, affording a diversity of colouration which calls forth admiration from all visitors whether they be amateurs or professionals. A recent visit to Dulwich Park, one of the most beautiful of the Metropolitan "lungs," was rewarded with a view of an exceptional display of rock plants and hardy flowering shrubs, which led one to imagine that London had been left behind for many miles, and that a delightful spot in the country had been reached. No signs of the bad effects of sulphurous and smoky air are here to be seen, the trees, the grass, and the plants wearing the glow of health and the signs of skilful care.

This park is only a small one, but many delightful views are afforded, and none is more rich in beauty than the entrance known locally as Snake's Lane. Whence arose this name I cannot say, and if, as is

usually the case, snakes are regarded as something to be avoided, it is palpably a misnomer. But then some snakes are known to have skins of brilliant colours, and from this point of view the designation is most applicable, for as one stands at either end a blaze of colours is brought to the sight such as one might well go many miles to see. One side of this entrance has been given up to rock plants, crowned with ornamental foliage and flowering trees and shrubs; and the other to large trees and old stumps, overgrown with Ivy. As a consequence of this the latter is sometimes known as the "Rootery," and the former the Rockery, names which everyone will admit are applicable.

Let us first turn our attention to the "rootery," where the object aimed at—to copy Nature—has been well achieved. Under the shade of the trees deliciously scented Wallflowers shed their fragrance around, while here and there a Periwinkle peeps out, and Primroses bloom profusely. Wood Hyacinths, white and blue, and Lilies of the Valley, with Brambles climbing over the stumps of trees and small mounds, all tend to enhance a most charming and refreshing sight.

On the opposite or rockery side the effect is totally different, but not one whit less pleasing. Bright masses of Aubrietias are seen covered with purple and rose blossoms, broad stretches of the chastely beautiful *Arabis alpina*, patches of Snake's Head Lilies (*Fritillaria meleagris*), and clumps of various coloured Auriculas add brightness and beauty. Saxifragas, too, are seen in great numbers, and including such varieties as Wallacei, Macnabiana, peltata, muscoides purpurea, zealandica, ceratophylla, Burseriana, sancta, and pyramidalis. Amongst the Aubrietias, Leichtlini, Campbelli, Hendersoni, and græca are far the most showy.

Other charming plants to be seen are *Veronica rupestris*, the rose-coloured *Phlox setacea*, *Tiarella cordifolia*, *Antennaria dioica rosea*, *Geranium lancastriense*, magnificent clumps of *Alyssum saxatile*, and *Iberis semperflorens*, while crowning the whole are specimens of *Magnolia conspicua*, *Pyrus (Cydonia) japonica*, *Berberis stenophylla*, *Dielytra eximia*, *Prunus sinensis flore-pleno*, *Pyrus malus floribundus*, *Forsythia viridissima*, and *Prunus Pissardi*. As it is at the Snake's Lane entrance so it is at the Court Lane and Rosebery Gates and on the rockeries in the middle of the park—everywhere there are flowers in abundance. In the American garden many of the *Rhododendrons* are open, and others have large healthy looking buds which give promise of a grand display in a short time. Large patches of *Daphne cneorum majus*, splendidly flowered, and lines of hardy Heaths are very beautiful.

Mention may well be made, in conclusion, of the cleanliness which pervades the whole of the park, borders, rockeries, grass, and walks all prove the presence of an indefatigable hand, and such is found in the Superintendent, Mr. W. Bailey, on whom the highest credit is reflected, for he has shown conclusively that he was in every way qualified to follow his talented and energetic predecessor, Mr. J. W. Moorman, who was transferred to the larger area of Victoria Park.—H. J.

SOUVENIR DE LA MALMAISON CARNATIONS.

FIFTEEN years or so ago I used the syringe on these Carnations, and never was free of spot and fungus. Being told by a good grower not to syringe or water the foliage, I tried the non-syringing system, and have never been troubled with fungus since. Mr. H. Dunkin (page 229) says "a judicious use of the syringe is one of the greatest cultural aids to keep them in good health, and those who are troubled with the fungus should use the syringe with persistent intelligence." Does "judicious use" and "persistent intelligence" really mean to syringe the plants, or the material the pots stand on?

The Rangemore practice and mine is to keep the plants in a cool temperature, never water the foliage, and shade from bright sunshine. If anyone has cleaner or finer looking plants than ours I should be pleased to see them. Do such well known gardeners and able growers as Messrs. Jennings, Douglas, and Roberts use the syringe on the above Carnation?

Speaking of Carnations, what a fine variety Mrs. H. Cannell is. It is the same size as Souvenir de la Malmaison, colour deep pink, does not split, and is perpetual blooming.—J. HAMILTON, *Byrkley, Burton-on-Trent*.

PRIMULA OBCONICA POISON AND REMEDY.

"G. H." remarks on page 306, about the great risk that gardeners and others run in the cultivation of this *Primula*, which could be reduced to a minimum if a little care were exercised. I have been a cultivator of this beautiful plant for a number of years, and have only once had a slight attack of its poisonous propensities, then having a large exhibit of these and other plants to remove at night, when a great deal of work had to be done in a short time, and I was perspiring freely. The next morning I found my hands and arms inflamed, and a tingling sensation similar to that caused by the sting of a Nettle. I at once applied with a sponge a mixture of Condyl's fluid and warm water, one dessert spoonful to half pint of water, allowing it to dry in. After a few applications the inflammation and irritation disappeared. I have recommended it in several cases, and it has always proved effectual.

I should indeed be sorry to see this charming plant disappear from our greenhouses. I know several who have given up its cultivation on account of its poisonous nature; it being of easy cultivation and very floriferous should make it a general favourite. Young plants raised

from seed sown in March, and potted as required in rich porous soil, make useful plants for winter flowering. The finest plants I have ever seen were grown by an amateur in a small greenhouse, which was a sight not easily forgotten.—C. H. H.

LINUM ARBOREUM.

SEVERAL *Linums* are favourite plants in greenhouses, but *L. arboreum* is not generally well known, and its flowers being rather small would not attract so much attention at first until its merits were recognised. It is, nevertheless, a useful plant, becomes quite shrubby in habit, attaining a height of several feet, and flowers freely from the apex of the branches.

Ordinary light loam with a moderate proportion of sand suits this *Linum*; but good drainage is required, and if the soil be somewhat heavy a proportion of leaf soil will be found beneficial. It can be



FIG. 54.—LINUM ARBOREUM.

increased by cuttings, but these require care, as they do not produce roots very readily. Fig. 54 represents *Linum arboreum*, which is suitable for growing in a cool house.

NARCISSUS EXHIBITION AT BIRMINGHAM.

THIS was held in the Edgbaston Botanical Garden on the 18th and 19th inst., and an opinion was freely expressed by the growers that it was the finest Exhibition ever seen, excepting that of the Daffodil Conference.

In the class for a collection of Daffodils on 15 feet of table, and in five tiers, the first prize was easily won by Messrs. J. R. Pearson & Sons, Chilwell Nurseries, Nottingham, with a superb exhibit, comprising seventy-five bunches of fresh blooms admirably staged. Amongst them were a bunch of thirteen wonderfully fine blooms of Madame de Graaf, Glory of Leyden (very fine), J. B. M. Camm, W. P. Milner (of the small trumpet section), P. R. Barr (a small Empress, a very refined flower of a most pleasing shade of yellow), Mrs. Vincent (a small white trumpet variety of excellent quality). The following short-cupped varieties were also conspicuous:—Maurice Vilmorin (soft cream, with orange cup), incomparabilis King of the Netherlands (a very little known variety,

with broad, expanded yellow cup, and wide pale cream perianth), Leedsi Mrs. Langtry (a soft creamy white self), Madeline de Graaff (of the incomparabilis section, pure white perianth, the cup lemon margined with bright orange, a charming variety), incomparabilis Goliath (one of the starry type, creamy yellow perianth and bright yellow crown), and Leedsi Duchess of Westminster (white, with light yellow crown, a chaste and beautiful flower and a good grower). The second prizewinner was Mr. T. W. Wilson, South Caves, Yorkshire. In the class for six varieties of the large trumpet section Messrs. Pope & Sons, King's Norton Nurseries, Birmingham, were first, showing Mrs. Camm, Empress, Mr. Camm, Emperor, Madame de Graaff, and Grandeur. Second, Messrs. Hewitt & Co., Solihull Nurseries; third, the Rev. Joseph Jacobs, Whitewell Rectory, Whitchurch, Salop; fourth, Mr. T. W. Wilson.

For twelve varieties of the Nonsuch, Peerless, or Chalice-crowned type the Rev. J. Jacobs was first with Leedsi Mrs. Langtry, Backhouse, Mr. Wilks, Nelsoni major, and N. aurantius, also the following of the incomparabilis section—Princess Mary, Duchess of Westminster, Maurice Vilmorin, Cynosure, Barri conspicua, Flora Wilson, Figaro, and Titan. Second, Mr. T. W. Wilson. There were also other classes for cut blooms. Mr. Cryor was the only exhibitor of plants in pots in two classes, and these were very fine well-grown examples. Bouquets, sprays, and epergnes of Narcissi were also well shown.

Some splendid seedlings and quite new varieties were staged for medals and certificates. Messrs. De Graaf, of Leyden, sent twenty-five new ones, one of which—Shakespeare, a fine golden yellow, large trumpet variety—was awarded a certificate. In this collection were grand blooms of Mrs. Pope (a beautiful variety), Tridymus, W. H. de Graaff, and incomparabilis Red Star. Messrs. James Veitch and Sons, Royal Exotic Nurseries, Chelsea, sent fifteen varieties, almost all seedlings, to one of which (Chelsoniana) a certificate was awarded, and two or three others were in great favour. Messrs. J. R. Pearson and Sons were awarded a silver medal for a handsome variety—Mrs. Hillhouse, cream trumpet and white perianth, of good substance and fine form. A bronze medal was awarded to the Rev. G. H. Engleheart, Appleshaw Rectory, Andover, for a seedling, large trumpet variety, named Sol; also for his seedling N. biflorus Appleshawensis. Certificates were adjudged to Messrs. Hewitt & Co., the Solihull Nurseries, for a charming refined distinct variety, Ida; and to Messrs. Peter Barr & Sons for Gloria Mundi, Dorothy Wemyss, and Mrs. Langtry. Special silver medals were awarded to Messrs. Barr & Sons for Weardale Perfection, a flower of great size and extra quality, and as the finest variety in the Exhibition. This variety was figured in the *Journal of Horticulture* last week. A special silver medal was also awarded to Mr. J. Mallender, gardener to Mrs. Mellish, Hodsock Priory, Worksop, Notts, for a very fine seedling, large trumpet variety, named Hodsock Pride, a cross betwixt Horsefieldi and princeps.

Messrs. Peter Barr & Sons staged a truly grand display of Narcissi and other hardy bulbous plant flowers. Several bunches of the beautiful miniature Narcissus Queen of Spain were much admired, and amongst others were incomparabilis Beauty, a striking variety; Commander, golden trumpet with a rich orange shading when opening, and an almost white perianth; poeticus grandiflorus, very fine; Nelsoni, Aurantius, De Graaff's Napoleon III. and many other leading varieties. Then there was a very interesting display of species of Tulips, such as Orphanadia, a very distinct bright brownish orange; undulatifolia, very dwarf and distinct, bright crimson with a distinctly and beautifully marked base; viridiflora præcox, bright light green and pale straw, a very distinct interesting species; Clusia, Leichtlini, elegans, elegans regale, all most interesting, and retroflexa, a beautiful lemon yellow, together with fine varieties of the Horned Tulip, Tulipa cornuta. Some pretty forms of Fritillarias were also staged. Messrs. Dicksons, Limited, Chester, made a telling display of cut flowers of Narcissi, including P. R. Barr, Princess Mary, King of the Netherlands, Leedsi Katharina Spurrell, Maurice Vilmorin, Leedsi Marie Magdalene de Graaff, Shirley Hibberd, very fine; poeticus grandiflorus, Madame de Graaff, Mr. J. B. Camm, Mrs. J. B. Camm, beautiful bunches of the old sweet scented single Jonquil, Mrs. Walter Ware, Duchess of Westminster, and the very distinct incomparabilis, Queen Sophie. Amongst other flowers, Erythronium grandiflorum, Muscari armeniaca, the charming Ranunculus amplexicaulis, Saxifraga purpurea, Cerasus japonica rosea pleno, and albo pleno, and the beautiful Pyrus spectabilis rosea pleno were conspicuous.

Mr. Robert Sydenham contributed a fine display of cut blooms of Narcissi, including Mrs. Goldring, the Swan's Neck Daffodil, very fine blooms; and Burbidgei, John Bain, charming; also the newer kinds of double and single Tulips.

Messrs. Hewitt & Co. sent a collection of spring flowering plants and Narcissi; and Messrs. Pope & Son, their new hybrid Auricula Marjorie and Epiphyllum Gærtneri.

DURHAM, NORTHUMBERLAND, AND NEWCASTLE-ON-

TYNE BOTANICAL AND HORTICULTURAL SOCIETY.

THE spring Show of the above Society was held in the Olympia, Northumberland Street, Newcastle, on Wednesday and Thursday last. The venue this year was changed. Since the first inception of the spring Show the Exhibitions have always been held in the Town Hall and Corn Exchange. It is quite certain the Committee were actuated by the best of motives in having the Exhibition in the Olympia, but it is very questionable whether it has been to the advantage of the

Exhibition. The building is very gaily decorated in rich and luminous colours, and it was bad to make the bright spring flowers harmonise so as to produce any good effect. There is no doubt Mr. J. Hood, jun., the staging manager, had an ardent task before him, and despite the consensus of opinion freely expressed, the old place is by far the best to hold the Show.

The Exhibition from a cultural point of view was of a very high-class order; in some instances the competition was not so numerous or so keen as in former years, but the quality of the exhibits was very good. This especially applied to Orchids, which were more numerous and of a higher-class order than exhibited at Newcastle before. Plants were not so numerous, but some very fine specimens were staged, both in the Orchid and specimen-plant classes being fine examples of cultural skill. Cinerarias, Spiræas, and Genistas, and Lily of the Valley were good, especially the former and latter. Auriculas were an interesting feature, and the usual success attended Mr. R. Patterson, gardener to Mrs. Backhouse, Ashburne Gardens, Sunderland. Cut flowers and table decorations were less strongly competed for, but formed, as is usual, one of the salient points of the Exhibition.

Plants.—For four plants, distinct, the Society offered £4 and the Royal Horticultural Society's silver Flora medal, £3 for second, and £2 for third. There were three competitors. Mr. James Wood, gardener to Ed. Hopper, Esq., Riverside Gardens, Morpeth, was first with a very superior Imantophyllum miniatum superbum, 6 feet across; Dendrobium nobile, 3 feet; Anthurium Schertzerianum, and Rhododendron Countess of Haddington; all well flowered. Mr. J. McIntyre, gardener to Mrs. Gurney Pease, Woodside, Darlington, was second; Mr. J. Smith, gardener to Theo. Lange, Esq., Heathfield House, Low Fell, Gateshead, being third. Mr. J. McIntyre was first with well-flowered Azaleas, and not too formally trained; Mr. J. Smith was second; and Mr. T. Wheeler, gardener to Chas. Smith, Esq., Jesmond Towers, Newcastle, third.

The Orchids were well shown, occupying a table by themselves, were more numerous than on any former occasion, and received from the public a good deal of attention. Mr. J. Wood here scored first again for three plants. Coelogyne cristata was very fine, and Vanda gigantea had four spikes; these two were supported by Dendrobium Wardianum. Mr. J. McIntyre was second, showing Cattleyas Mendelli and crispa in good form. Mr. T. Wheeler was third, showing Dendrobium nobile, Cymbidium eburneum (thirteen spikes), and Coelogyne cristata. Mr. J. Smith was fourth. Mr. J. Wood sent a fine collection, not for competition.

For a Palm, not less than 8 feet high, Mr. J. Smith was first with Kentia Fosteriana. Mr. D. Oleghorn, gardener to James Knott, Esq., Manor House, Jesmond, was first with Deutzias; and for Genistas, which were very good, Mr. W. Blackwood, Saltwood Gardens, won. Spiræas, as usual, were in great numbers, and with Cinerarias were utilised for the decoration of the band stand with much effect. Mr. William Pitt, gardener to Chas. Bell, Esq., Woolston, was first for Cinerarias. Primulas and Cyclamens were short in numbers; Messrs. G. M'Dougall and J. McIntyre were first respectively. Lily of the Valley were splendid, and altogether an exhibition in itself. Mr. W. R. Armstrong, nurseryman, High Cross, Benwell, Newcastle, was first. Strawberries were shown amongst pot plants; Mr. J. McIntyre was first with Keen's Seedling. Table plants also made a good show.

Auriculas in recent years in the North of England have engaged the attention of many florists, and the success attending Mr. R. Patterson as a new exhibitor has helped considerably to swell the number. Although the number of exhibitors was not so great as in former years, the flowers were extraordinary. Mr. R. Patterson was first for twelve Auriculas, Alpines excluded; Mr. E. Adams, Swalwell, was second. For six distinct Mr. R. Patterson was also first, and for four Auriculas the same exhibitor was first again, including a local variety named George Garrett (Adams); also for one green-edged and two Auriculas, distinct. For one grey edge Mr. E. Oliver, Forest Lodge, was first. For twelve Auriculas (Alpines) Mr. R. Patterson followed up his former success. Mr. E. Adams was first for seedling Auriculas, Alpines excluded. Polyanthuses were also strongly represented, these flowers being largely grown in the north. For six gold laced Mr. R. Willis, Cramlington, was first; a most interesting collection. Mr. J. Cawthorne and Mr. J. Ellison respectively occupied the other positions.

Bulbs in Bloom.—These were a most extraordinary feature of the Exhibition. Hyacinths were splendid. Messrs. H. Dewar & Co., nurserymen, Grey Street, Newcastle, were first with twenty-four, staging good specimens. Mr. J. Rogers, The Hall Nursery, Fenham, was second with very good blooms. Mr. Geo. M'Dougall, gardener to H. Pease, Arcot Hall, Dudley, was third. For twelve varieties Messrs. Dewar & Co. also won. For pots of single Tulips, Mr. J. M'Dougall was first. For six pots of double Tulips Mr. J. Wood, Fenham, was first. Narcissi and Daffodils were also well shown.

Cut Flowers and Table Decorations.—Camellias were very good, fine flowers in texture and shape. Mr. M. Larke, gardener to F. Thompson, Esq., J.P., North Dene, Gateshead, was first. For twelve bunches of Rhododendrons, Mr. J. Wood was first. Azaleas and R. ses were well shown. Mr. A. J. Badenock, Pontilands, was first for Maréchal Niel. Both Show and Fancy Pansies well staged, Messrs. M. Wheatley and A. Bailey, jun., winning respectively. The best vase or epergne for drawing-room was shown by Mr. F. Edmondson, florist, Green Market, Newcastle, the first prize. The second epergne prize was won by Miss Edmondson. For bridal bouquets, the well-known exhibitors, Messrs.

Perkins & Son, Coventry, were first, with their usual chaste arrangement. The same exhibitors were also first for the hand bouquet, for ladies' spray and buttonhole.

In other divisions the exhibits were fine. Most of the local nurserymen and florists sent stands of plants, which added considerably to the attractiveness of the Exhibition, including Messrs. Adamson Bros., W. R. Ormston, of Newcastle; William Fell & Co., Hexham; W. F. Gunn, Durham Road, Sunderland.

The success attending this spring Show from a monetary point of view is one that will be most satisfactory to the Committee and their zealous Secretary Mr. J. G. Gillespie.—BERNARD COWAN, F.R.H.S.

NATIONAL AURICULA AND PRIMULA SOCIETY.

SOUTHERN SECTION.

THE annual Exhibition of the National Primula and Auricula Society was held in the Drill Hall, Westminster, on Tuesday, 24th inst. The display was an admirable one, the Auriculas, however, were somewhat coarse. We append a list of the prizewinners in the principal classes.

For two Show Auriculas, distinct, Mr. Badcock, Oxford Road, Reading, was first with Mrs. Dodwell and Rev. F. D. Horner, each in good form; Mr. Phillips, Hamilton Road, Reading, was second with Rev. F. D. Horner and Mrs. Potts; Mr. W. L. Walker, Earley, Reading, third with Acme and Mrs. Potts; Mr. W. F. P. Meakin, Castle Hill, Duffield, Derby, fourth with Marmion and R. Brocklebank; Mr. A. Fisk, Broxbourne, Herts, fifth with the Rev. F. D. Horner and Mrs. Potts; and Mr. J. J. Keen, 15, Castle Street, Southampton, sixth with Mrs. Dodwell and Rev. F. D. Horner. For four Auriculas, distinct, Mr. Wm. Smith, Bishops Stortford, was a good first with clean examples of George Lightbody, Heatherbell, Mrs. A. Potts, and the Rev. F. D. Horner. The second position was accorded to Mr. C. Phillips with George Rudd, Acme, Mrs. Potts, and an unnamed variety; the third to Mr. W. F. P. Meakin; and the fourth to Mr. J. J. Keen. The first prize for twelve show Auriculas, distinct, was taken by Mr. T. E. Henwood, Hamilton Road, Reading, who staged fine examples of Marmion, Mrs. A. Potts, Prince of Greens, Black Bess, Mrs. Dodwell, Rev. F. D. Horner, Richard Headley, Lancashire Hero, Acme, George Lightbody, George Rudd, and Abbé Lizst. The Rev. F. D. Horner, Kirkby Lonsdale, was second with creditable examples; Mr. J. Douglas, Great Gearies, third; Mr. B. Simonite, Derwent Street, Sheffield, fourth; Mr. R. Patterson, Ashburne Gardens, Sunderland, fifth; and Mr. A. J. Sanders, gardener to the Viscountess Chewton, Cobham, Surrey, sixth.

For a group of fifty Auriculas, in not less than twenty varieties, Mr. J. Douglas was first with a splendid exhibit, and the Guildford Hardy Plant Nursery, Millmead, Guildford, was a good second. The first prize for twelve Alpine Auriculas, dissimilar, was awarded to Mr. C. Phillips, who showed Evelyn Phillips, Dot, Mrs. Martin Smith, Fire Fly, and Mrs. F. C. Barnett amongst others. Mr. W. L. Walker was a good second; Mr. J. Douglas third; Mr. A. J. Sanders fourth; and Mr. Chas. Turner, Royal Nurseries, Slough, fifth. There were nine competitors in the class for six distinct Alpine Auriculas, the first prize going to Mr. Chas. Phillips with Dot, Defiance, Mrs. Martin, Miss Frost, Flo. Henwood, and a seedling. Mr. J. Douglas was second with well-grown plants; Mr. Chas. Turner third; Mr. J. Gilbert, gardener to the Rev. L. R. Flood, Merrow Rectory, Guildford, fourth; and Mr. A. J. Sanders, fifth. Mr. W. L. Walker was first for four Alpines, staging excellent plants of Miss Moon, T. E. Henwood, Mrs. Martin, and a seedling. Mr. J. J. Keen was second with Fred. Knighton, Roland, Mrs. Martin, and John Allen. Mr. J. F. Kew, London Road, Southend, was third with four seedlings; Mr. J. Gilbert fourth, and Mr. A. Fisk, Broxbourne, Herts, fifth. For a single Alpine Auricula, with a gold centre, Mr. C. Phillips was first and second with Evelyn Phillips, Mr. J. Douglas third with Dean Hole, Mr. Walker fourth with Miss Moon, and Mr. C. Turner fifth with Magnet. For a single Alpine with a white or cream centre Mr. Walker was first with Edith, Mr. C. Turner second and third with Countess, Mr. C. Patterson fourth with Queen Victoria, and Mr. Sanders fifth with Walter Oliver.

Mr. T. E. Henwood was first for six Show varieties, distinct, staging George Rudd, George Lightbody, Lancashire Hero, Mrs. Dodwell, Revd. F. D. Horner and Mrs. Potts. Mr. A. J. Sanders was second with Mrs. A. Potts, Revd. F. D. Horner, George Rudd, Talisman, Mrs. Dodwell and George Lightbody; Mrs. J. Douglas third with Marmion, Abbé Lizst, Mrs. Dodwell, Elaine, Mrs. Potts and Revd. F. D. Horner; Mr. R. Patterson was fourth, Mr. B. Simonite fifth, and Mr. J. Weston, gardener to D. Martineau, Esq., Clapham Park, sixth.

The first prize for a single green edged specimen was accorded to Mr. J. E. Henwood with James Hannaford; the second to J. Bennett-Poë, Esq., with Revd. F. D. Horner; third and fourth Revd. F. D. Horner with his namesake, Mr. Henwood fifth with the same variety; Mr. J. Douglas sixth with Prince of Greens; Mr. Badcock seventh with Revd. F. D. Horner, and Mr. J. Douglas eighth with the same variety. For a single grey edged specimen Mr. A. J. Sanders was first and second with George Lightbody, Mr. T. E. Henwood third, Mr. R. Patterson fourth, Mr. T. E. Henwood fifth, Mr. W. Smith sixth, each showing the same variety; Mr. J. Douglas seventh with Marmion, and Mr. Simonite eighth with a seedling. For a single white edged specimen Mr. W. Smith was first with Acme, Mr. Patterson second, Mr. A. J. Sanders third with the same variety; Mr. W. Smith fourth with Mrs. Dodwell; Mr. Simonite fifth and sixth with Heatherbell;

Mr. T. E. Henwood seventh with John Simonite, and Mr. J. Douglas eighth with Lady R. Churchill. For six gold-laced Polyanthuses, distinct, Mr. A. J. Sanders was first, and Mr. J. Weston second.

Mr. A. J. Sanders was also awarded the first prize for three distinct gold-laced Polyanthuses, Mr. J. Weston being second, and Mr. R. Dean, Ranelagh Road, Ealing, third. For a single specimen gold-laced Polyanthus Mr. Weston was first with Mrs. Brownell, Mr. A. J. Sanders second with Formosa, Mr. Weston third with John Bright, and Mr. Sanders fourth with the same variety. For twelve Fancy Auriculas not less than six varieties Mr. J. Douglas was first, the Guildford Hardy Plant Nursery second, and Mr. R. Dean third.

In the class for a group of Primulas and Auriculas Mr. J. Douglas was first, the Guildford Hardy Plant Nursery being second. For twelve Primulas, distinct, Mr. J. Douglas was again first with *amœna laciniata*, *intermedia*, *japonica*, *Sieboldi*, and others. The Guildford Hardy Plant Nursery was a fair second. The Guildford Hardy Plant Nursery was accorded the first prize for six distinct double Primroses in pots with Madame Crousse, white, Madame Pompadour, Queen Victoria, yellow and lilac. Mr. J. Douglas was first for twelve Primroses, distinct, single, with finely bloomed plants. Mr. A. J. Sanders was second. Mr. J. Douglas was first for twelve distinct Polyanthuses, Fancy; Mr. R. Dean being second, and Mr. A. J. Sanders third. Mr. J. Douglas was a good first for a basket of Primroses arranged for effect, Mr. R. Dean being a fair second.

The premier Auricula in the Show was Mr. B. Simonite's Dr. Hardy, the same plant being awarded Mr. W. Smith's special prize for the best seedling green edged variety. The first prize for a green-edged seedling was awarded to the Rev. F. D. Horner, with T. E. Henwood, and Mr. B. Simonite was second with the same variety. The first prize for a single specimen seedling self went to Mr. C. Phillips for Mrs. C. Phillips. For a single specimen self Mr. C. Phillips was first with Mrs. Potts, Mr. Smith second, Mr. Patterson fourth with the same variety, the Rev. F. D. Horner fifth with Fairy, Mr. Simonite sixth with Haide, the Rev. F. D. Horner seventh with Doris, and Mr. T. E. Henwood eighth with Mrs. Potts.

For a single grey-edged variety Mr. Sanders was first with Francis Sanders, and the first for a white-edged seedling to Rev. F. D. Horner with Albatross. The first prize for a golden centred Alpine went to Mr. Phillips with Mr. R. Brown, and the second to Mr. J. Douglas with Virgil. Mr. A. J. Sanders was first for a seedling Alpine with a white or cream centre, with Arthur Maxwell and second with Maggie Sanders.

Certificates were awarded to Mr. B. Simonite for green-edged T. E. Henwood; to Mr. Phillips for self Mrs. C. Phillips; to the Rev. F. D. Horner for self Buttercup, and to Mr. B. Simonite for self Raven. Mr. J. H. Arkwright, Hampton Court, Leominster, showed plants of Primrose Evelyn's Beacon, and Mr. J. Forbes blooms of Polyanthuses.



HARDY FRUIT GARDEN.

Apricots.—Disbudding.—Continue to remove superfluous shoots from various parts of the trees on walls and gable ends by the operation of disbudding. Most attention should at first be paid to the upper and more vigorous parts, though at the same time a few may be dispensed with in the lower branches. It is too early to complete the work of disbudding, the least check being given to trees when the removals are effected gradually and at short intervals. Remove the softest growths. Those longer and more woody cannot so easily be detached, therefore it is best to cut them off cleanly with a sharp knife. First examine the trees for growths that point inwards or growing towards the wall, where they cannot possibly be of practical use. Many of those extending outwards at right angles to the principal branches, and known as fore-right shoots, may be freely thinned out, reserving some of the best placed to be pinched for the formation of spurs. Reserve the best situated shoots near the base of bearing wood in order that they may be carefully trained in as succession shoots. It is not advisable to defer disbudding to a late period. The removal of long shoots with abundant foliage carried out severely is detrimental to the well-being of the trees.

The maggot is frequently troublesome to the Apricot at this period; but it cannot be dislodged by insecticides, being rolled up in the leaves, and must be removed by hand-picking or crushed. Examine the soil at the base of walls, and if dry water copiously. Attention to this may prevent much fruit dropping. Where abundant crops of fruit have set thin early, those ill placed being removed first. Syringing may be resorted to in warm bright weather; young trees especially are encouraged to make healthy growth with occasional extra humidity about them, providing the roots are duly moist. Much of the moisture in the soil may be conserved by a mulching of manure when the hot weather arrives.

Peaches and Nectarines.—The chief work among these now is frequent attention to disbudding. Proceed from the higher parts of the trees where, as a rule, the earliest vigour is shown, and in consequence the forwardest shoots are placed. A moderate number of growths

only ought to be detached at one time, using judgment in selecting those which need early removal. Even greater attention is needed by these fruits than the Apricot, because they depend largely upon a supply of young wood for the next season's fruit-bearing, spurs, either natural or artificial, not being so freely encouraged. Endeavour to eventually fill any vacant spaces by preserving a suitably placed shoot. In this way it is thus possible to gradually reform unshapely specimens. The most important shoots for retaining in well-trained trees are one at the base of the current bearing shoots and another at the extremity of the latter, which is utilised as a drawer of sap for the fruit below. It must not be allowed to make headway too far, hence pinch it back when two pairs of leaves have gained full size. Provide for proper extension. In removing superfluous shoots select the most favourable periods. When the sap is active in warm weather more disbudding may then be done than when dull, cold periods check the flow.

One of the chief causes of early attacks of red spider and aphid is dryness at the roots. When the trees are in full growth the large expanse of foliage, with the strain of blooming and fruit setting, make large demands upon the roots as regards moisture, and if these demands are not promptly met the foliage is the first to suffer, speedily becoming unhealthy, then attacked with insects. Therefore attend well to root moisture, and the health of the trees will be more easily maintained. It is useless attempting to destroy red spider when the rooting medium is dry, but it may be banished by the frequent use of the syringe and soapy water, after an adequate supply of water has been afforded the border.

Plums and Cherries.—Plum and Cherry trees on walls require very similar treatment to Apricots with regard to the management of the growth. The young wood retained, however, does not bear the following year like that of Peaches, Nectarines, and Apricots, but needs to be two years old when fine fruit is produced upon it. Trees can be kept healthy by renewing both branches and spurs, the system of fan training easily admitting of this being done. Disbudding is mainly practised to prevent overcrowding and to dispense with shoots that are produced in wrong positions. It is of much importance in regulating the form of young trees. The best situated of foreright shoots on large trees should be pinched back to the second pair of fully formed leaves. They will eventually form fruiting spurs which prove productive for some time.

Apples and Pears.—When training bush and pyramidal trees much may be done in deciding their shape by judiciously practising disbudding, by which the shoots may be easily reduced in numbers, thus allowing more room for the reserved growths intended to form the outline of the trees. On older trees considerable time and labour might be subsequently saved by a little thinning out now of what ultimately will be crowded wood. Old spurs are very liable to be choked with growth, not half of which can be thoroughly ripened if means are not taken by disbudding to dispense with the least promising. This applies specially to wall trees, but the same rule holds good with respect to other forms when branches are too close and the spurs probably nearer still.

Newly planted trees ought to have the soil about the roots maintained in a moist state though not kept too wet. Syringing in hot weather is beneficial. It keeps the trees clean and encourages growth.

FRUIT FORCING.

Figs.—*Earliest Forced Trees in Pots.*—When the Figs commence ripening, the supply of water at the roots must be diminished, syringing being discontinued, and a free circulation of warm dry air afforded, leaving the top ventilators open a little at night. The soil, however, must be kept moist, and a moderate moisture in the atmosphere secured by occasionally syringing available surfaces, but this will only be required in very bright weather. When the first crop is gathered syringe the trees twice daily, renewing the top-dressings, and watering at the roots with weak liquid manure. If the second crop of fruit is very plentiful they must be thinned out, so as not to overtax the trees for early forcing next season, and the second crop Figs should be confined to the base of the growths.

Early Forced Planted-out Trees.—The fruit is fully three weeks earlier than usual, some of it having commenced to ripen. The border must be examined, and if at all dry apply a thorough supply of water or liquid manure. Cease syringing the trees when the fruit gives indications of ripening, avoiding a superabundance of water about the house, but moderate moisture is necessary for the benefit of the foliage, having a little ventilation at the top of the house constantly, and a free circulation until the fruit is all gathered.

Succession Houses.—Frequent attention must be given to stopping the shoots at the fifth joint, and subsequently to one or two; but too many side shoots or spurs should not be encouraged, as the fruit and wood require light and air for their maturation. Train extensions in their full length, thinning or removing strong growths, so as to admit light and air to the fruit. Attend daily to syringing the trees, and supply water as necessary to maintain thorough moisture at the roots. Renew the mulching if necessary, but not having it very thick, an inch or two sufficing, and keep it moist, so as to encourage surface roots.

Peaches and Nectarines.—*Earliest Forced House.*—The earliest varieties are now ripening, and the trees must not be syringed, but the border should not be allowed to become dry. As the fruit of the other varieties will not be ripe for some time yet, the atmosphere must be kept genial by sprinkling the borders and paths as they become dry, syringing the trees in the morning, and again when closing the house. The night temperature may be kept at 65° to 70°, but 5° less, though it will retard the ripening, will not tax the energies of the trees so much as the higher

temperatures. Leaving the ventilators slightly open constantly at the upper part of the house will be an advantage. In the daytime, 70° to 75° by artificial means, and 10° to 15° more with sun heat, will be suitable temperatures.

Trees Stoning the Fruit.—Do not hurry trees undergoing this process, 60° to 65° at night is ample, and 70° to 75° by day, avoiding high night temperatures and sudden fluctuations. A little air left on at night will prevent the deposition of moisture on the foliage through the night to any serious extent; enlarge the openings when the sun acts on the house, yet without lowering the temperature, which should advance with the increased power of the sun and a corresponding increase of ventilation. Fumigation should, if possible, be avoided. It dries the atmosphere, and not unfrequently cripples the foliage, when the fruit may from the check be seriously imperilled and fall. Early closing is an advantage, but it must not be done to the extent of undue excitement, nor continued until late, the temperature being allowed to fall with the declining sun. It is also advisable to allow a little extra latitude to the growth, but on no account permit foliage to be made that must afterwards be removed in large amounts. The growths should be secured in position as they advance.

Trees Swelling their Fruits.—The fruit swells rapidly in the early stages, and up to the commencement of the stoning process. The swelling of the fruits is materially accelerated by the maintenance of a genial condition of the atmosphere and the means employed to secure a good root action, which is best effected by a judicious and gradual regulation of the growth by the process of disbudding and in thinning the fruits. These operations should be done carefully. The more vigorous the tree the greater the danger of the fruit being cast in stoning, and the evil is often aggravated by previously disbudding severely, which favours strong growth more than steady progress. Supply water thoroughly to inside borders when necessary, lay-in the shoots so as to induce them to grow in the proper direction, allowing room in the ligatures for the swelling of the growths. After the fruit has stoned it takes the last swelling, when the shoots should be well tied down, but a moderate extension of growths will materially assist the fruit in swelling. Any leaves that shade fruit should be drawn aside or shortened; and fruits on the under side or back of the trellis be raised on pieces of laths placed across the wires.

Cherry House.—The stoning being completed the fruit will commence colouring, when syringing must cease, and not be had recourse to again until the trees are cleared of their crops; but a good moisture should be maintained in the house by keeping the surface of the border moist, or if the trees are in pots damping the floor two or three times a day. The temperature must not exceed 65° by artificial means, and 55° to 60° at night, with a little ventilation, increasing it at 65°, liberally at 70°, and not allowing the heat to rise above 75° without free ventilation, closing at 70°, subject to leaving a little air on constantly at the top of the house. See that the borders do not want water, and liquid manure may be given to trees in pots.

Melons.—*Early Plants.*—Directly the fruit commences to ripen lessen the supply of water at the roots, but not so as to distress the plants, for if the foliage has been kept clean and the roots in good condition a second crop of Melons may be had. Atmospheric moisture should be withheld, and a circulation of warm dry air ensured, increasing the temperature to 70° or 75° artificially and 80° to 90° with sun heat. Cracked fruits are produced by a close and moist atmosphere with too much water at the roots, which induces an excess of sap and consequent effort at growth. If any fruits show a tendency to crack cut the shoots about half way through with a knife a few inches below the fruit, and diminish the supply of moisture at the roots and in the atmosphere. Cut the fruits before they are very ripe, keeping them on shelves in a warm house until they are in proper condition, or they may be removed to a fruit room for two or three days to become equally ripened all over.

Successional Plants.—Fertilise the blossoms when fully expanded, the atmosphere being kept rather drier and warmer, and ventilation attended to early, with a little constantly if there is danger of moisture condensing on the blossoms. Stop the shoots at the time the fertilisation is done one joint beyond the fruit. To insure a full crop have a number of fruits on individual plants in the same stage of growth. Earth up the plants with some rather strong and rich loam after the fruits begin to swell, ramming it down firmly, placing a little fresh lime around the collar to prevent canker, and if it appear rub quicklime well into the affected parts.

Plants swelling their fruits should be syringed freely in hot weather at about 3 P.M., or earlier if necessity arise for closing, damping the floor in the morning and in the evening, using liquid manure or guano-water occasionally, having the latter at the rate of 1 oz. to a gallon of water, and the former not too strong. Shade only to prevent flagging. Ventilate freely in favourable weather, commencing from 75° to 80°, increasing or decreasing it during the day as may be necessary, maintaining a day temperature of 80° to 85°, or 90° with sun heat, closing between 80° and 85°, and if an advance be made to 90° or 95° after closing it will materially assist the fruit in swelling and lessen the necessity for fire heat at night, but it must be accompanied by plenty of atmospheric moisture. If red spider appear cover the hot-water pipes with a thin wash of sulphur and skim milk, and for thrips fumigate on two or three consecutive evenings.

Train the growths out regularly in pots and frames, avoiding crowding, and when the blossoms appear fertilise them about mid-day on fine days. Maintain a good bottom heat by linings, and admit a little air

if there is danger to be apprehended from rank steam. Employ thick night coverings as the nights are yet cold, but do not allow the covering to hang over linings of fresh manure, and so injure the plants by introducing steam into the interior. Sow seed for raising plants to put out in pits and frames as they become cleared of bedding plants, and pot the seedlings as they require it.

THE FLOWER GARDEN.

Iresines, Coleuses, and Alternantheras.—If either or all of these are required for summer bedding excellent plants, if cuttings are plentiful, can yet be raised in a very simple manner. The requisites are either pits or frames, and gentle bottom heat afforded by mild fermenting material. Raise this near to the glass, cover with about 4 inches of light soil, and surface over with sharp sand. With little or no preparation the cuttings, after the lights have been on long enough for the soil to become well warmed through, may be dibbled out 3 inches apart, and if kept uniformly moist, close and shaded from bright sunshine, they will soon root. Cover with mats during cold nights, top the Iresines and Coleuses once, gradually harden and transfer direct to the beds during the second week in June.

Lobelias and Ageratums.—If these are crowded in boxes or starved in small pots they cannot be satisfactory, whereas if temporarily bedded out in frames, rough or otherwise, they increase in size considerably and move well in due time. Give them the benefit of moderately rich soil broken finely, plant out 4 inches apart each way, and keep somewhat close and shaded till well established in their fresh quarters.

Violas and Pansies.—Plants raised from cuttings last autumn and kept during the winter in frames are too often spoilt ere they are planted out. Crowded together they draw up rapidly, and are a mass of flowers just when they ought to be kept free of them and growing healthily. Now is the best time to plant out where they are to flower, and old plants can also be divided and replanted with good results. Delay the work till the more tender bedding plants are put out, and the chances are mildew will be quickly in the ascendant. Violas form good marginal lines to long borders and the larger beds, and are also very effective in mixture with gold, silver, and bronze-leaved Zonal Pelargoniums. The latter can be filled in where spaces are left for them in due course. Both Violas and Pansies raised from seed early this spring will flower freely during the summer if only they are kept steadily growing during the next few weeks. Give them room in either boxes or beds of good soil, sheltering from cold weather, but avoiding coddling.

Antirrhinums and Pentstemons.—If seedlings raised this spring are to be of much service this summer they must not be kept crowded in the boxes or pans in which they were pricked out. They would transplant fairly well if treated as advised in the case of Lobelias, but seeing that they are comparatively hardy, all intended for the borders might well be hardened off and planted out shortly. The dwarf bedding varieties of the former, the white form in particular, are very effective in beds; and Pentstemons, if the strain is good and the plants well grown, will also make a fine display.

Nicotiana affinis.—This very easily raised plant, though scarcely suitable for small beds, does well in the centres of larger ones, and groups or single plants dotted about the borders and shrubberies both brighten these up and scent the neighbourhood. It is by no means a delicate plant, but suffers from being starved in a young state. Supposing the seedlings have been pricked out in pans or boxes before they crowd each other, bed out in frames or pits as advised with Ageratums. By hedding out time strong plants will be available, these moving with a good ball of soil and roots, and are not long before they commence flowering.

Ricinus.—A few of these noble Castor Oil plants are distinctly ornamental when either arranged in groups in large beds or singly in the centre of smaller ones. If raised early they become tall and shabby before they are put out. If sown now, singly in 3-inch pots and placed in brisk heat, the seed will germinate in a few days. Keep the plants near the glass in gentle heat, and if a shift into large pots is given before they become root-bound, sturdy handsome plants will be ready for the beds in June.

Sunflowers.—The seed of strong growing forms, and to which Oscar Wilde and Primrose are good additions, will germinate if sown now where the plants are to be grown, but there will be less likelihood of failure if it is sown in gentle heat, and the seedlings potted singly prior to planting out. They will also move well out of boxes and pans. The miniature Sunflower is particularly serviceable, as it only attains a height of about 30 inches, is very branching and floriferous, and for cutting is invaluable. There is yet time to raise plants.

Zea japonica.—The variegated form of Japanese Maize still retains its popularity as a summer bedding plant. Not only is it effective in the back lines of mixed borders, but is also admirably adapted for dotting among Begonias and other dwarf plants. Sow the seed at once, either singly in small pots or thinly in pans or boxes. They experience the least check when planted out of the former. Placed in heat germination soon takes place, and plants 6 inches in height will be ready for the beds when wanted.

Marigolds.—Both the African and French Marigolds are showy border annuals, and dwarf and miniature strains of the latter are suitable for the flower beds. It is a mistake to raise them very early. Sow the seed somewhat thinly in boxes, and place in gentle heat to germinate. Transfer to frames before the plants become drawn. Unless crowded there is no necessity to prick out these Marigolds.

Tropæolums and Nasturtiums.—The former, notably the Lobbianum family and canariense (Canary Creeper), are very attractive trailing plants for the fronts of houses, window boxes, porches, and such like. Either sow the seed singly in small pots or in pans, and pot off. Germination takes place quickly in gentle heat, and good plants will be ready by the end of May. Nasturtiums are of a dwarfer habit of growth, and in the Tom Thumb varieties we have remarkable showy bedding plants that are proof against either wet or dry weather. They are particularly well adapted for hot and dry positions where other summer bedding frequently fail. The seed may either be sown where the plants are to grow, or, better still, the seedlings be raised and planted out as advised in the case of Tropæolums.

Sowing Annuals.—Poppies in variety, including the popular Shirley, ought now to be in need of thinning out, and more may be sown with the view of having a longer succession of flower. Sweet Peas and Mignonette may yet be sown, though these again succeed best when raised somewhat earlier. If not already done sow seed of any hardy annuals and ornamental grasses that may be required. Where the plants are to flower sow thinly in circular patches or lines, cover with sifted soil, and protect the delicate seedlings from slugs.

PLANT HOUSES.

Poinsettias.—These plants having enjoyed a good rest may be started again into growth. Cut the shoots back close to the base, then shake away the old soil from amongst the roots and place them in pots one size less than those in which they are intended to flower. Use for a compost good fibry loam, one-seventh of decayed manure and sand. The soil should be pressed firmly into the pots. After potting, place the plants in an intermediate temperature. To secure good bracts the object is to aim at firm sturdy growth from the first, gradually giving more air as the plants extend their growth until they can be placed into cold frames. Where increased stock is needed the easiest and quickest method is to cut the ripened stem into lengths of two joints; these may either be inserted thickly together in pans, or placed singly into thumb pots in sandy soil. Nearly every one will root if placed into brisk heat. When the plants are rooted they should be hardened to an intermediate temperature, and then grown with the plants that have been cut back.

Euphorbia jacquiniæflora.—Side shoots, 2 inches in length, on plants that have been hardened for ten days or a fortnight in a cool airy place will root freely. Six-inch pots should be well drained and filled with sandy soil ready before the cuttings are taken off. The cuttings should be removed with a sharp knife where they issue from the old stems, and inserted at once. Give a slight watering, and cover the cuttings with a bell-glass, then place in brisk heat where they can be shaded from the sun. When sufficient stock has been raised the old plants should be cut back and allowed to break into growth in heat, when they may have the old soil shaken from their roots and repotted in the compost advised for Poinsettias. Allow them to remain there for a fortnight, and then give them intermediate treatment.

Centropogon Lucyanum.—There should now be plenty of side shoots, and these will root if treated much the same as advised for Euphorbias. We find they root best, however, if the pots containing them are placed on a moderately dry shelf, where they can be shaded from the sun. Cut back the old plants and repot; the old balls may be reduced by one-half. Once they start into growth give them intermediate treatment. Cuttings of Plumbagos may also be rooted, and when these have been obtained the old plants may be thrown away.

Justicia flavicomma.—Good cuttings should now be plentiful, and these can be inserted singly in thumb pots, or three or more may be placed in each pot. As nearly every one will root freely if well watered, shaded, and stood in hand-lights, the old plants can be cut close back, and when they have commenced growth they may be partially shaken out and replaced in the same size pots. Young plants grow with more vigour than old ones, and are much less liable to the attacks of brown scale.

Tydaes.—Varieties of the Madame Heine section that do not make underground stems may be propagated by cuttings. Good healthy cuttings should be inserted singly in small pots, and when sufficient have been obtained throw away the old plants. Cuttings root very freely in any close moist place if shaded from the sun. When they are rooted remove the points to induce the plants to branch. Cuttings may also be rooted in pans, and the tops taken from these after they have attained strength if bushy little specimens only are needed in 5 inch pots.

Achimenes.—These are now producing cuttings in abundance. Where baskets are appreciated these may be made up at once by transplanting the young plants moderately thick around the baskets and over the top. For all ordinary decorative purposes cuttings inserted into rich light soil in 5-inch pots make beautiful dwarf flowering plants. These will root in any warm shady position, but water should be kept from their foliage. When well rooted expose the plants to a moderate amount of light, and do not keep them too close and warm.

Amaryllis.—As the plants go out of flower they must be encouraged to make good growth. They need full light; stiff sturdy growth should be aimed at, and this must be obtained by warmth early in the season, full sunshine, and a free admission of air. Soot water and other weak stimulants are beneficial when the plants are rooting and growing freely. Any bulbs that are still resting may be shaken out and repotted. If starting them into growth is delayed until too late in the season the plants have not a chance of making good

growth and thoroughly maturing it, which is essential if they are to flower well.

Caladiums.—Plants started in boxes and then potted are now growing freely, and the majority of them need placing into larger pots. In full sunshine these plants develop beautiful coloured foliage, and are of dwarf sturdy growth. When grown under too moist and too shady conditions the plants flag and the foliage falls about. The charming and useful *C. argyrites* growing in 2½-inch pots may be placed into 5-inch pots. Like the stronger growing varieties, this kind likes plenty of light.

Gloxinias.—Seed may still be sown. Seedlings that are large enough may be pricked out singly into pots, boxes, or pans, and finally placed singly into pots. A good plan is to make up a hotbed in a frame, and place 3 inches of soil on the top of a light nature, and transplant the plants 6 inches apart. By this method abundance of flowers are produced for cutting purposes, and the plants give very little trouble in watering. Few plants pay better for planting out than Gloxinias. The flowers are too soft for travelling, but for home decoration they are invaluable.

THE BEE-KEEPER.

APIARIAN NOTES.

I HAVE completed another of my annual visits amongst bee-keepers of some parts of Lanarkshire where vegetation at 700 to 800 feet above sea level is as far advanced as in the Lowlands. All whom I met are in hopes of another good season. The Heather is indeed more promising at this date than at any time since 1845. The Clover is also showing well, and full-sized hives, if favoured with auspicious weather during the honey season, are sure to make great weight.

In not a few cases, however, the hives are too small, which I pointed out to them. Anxious inquiries were made as to how they could enlarge them, and at what time to do it. I explained that full sized hives were proportionately as full of bees now as were the undersized ones. The remedy to them, and to the readers of the *Journal of Horticulture*, is the same. Adopt it at once with built-out combs, if they are to be had; if not, full-sized sheets of foundation or drone comb will be built. Bees during the spring months ought not to be with building combs, especially those that would cause a drain of the hive with a reduction of the honey yield. To have hives and their equipments of a proper size is a most important point. The best way of arriving at this is to employ a little arithmetic. A queen lays in a full sized hive in the height of the season 3000 eggs daily for eighteen to twenty days. These eggs will be hatched in from four to five more days; the bees will take their first flight, and from six to ten days more will be at work gathering honey and pollen. At the end of twelve months some of them will still be alive. Generally speaking, all the bees hatched from April 1st will do good work during the whole summer. Subtracting 15 per cent. for loss of bees, gives an approximate of what space bees should occupy, and the amount of honey that might be gathered in a good district and season.

FIXING FOUNDATION.

One bee keeper I visited had some beautiful Stewarton supers filled with honey, also a well filled glass case. The putting together of the case and the fixing of the foundation was performed for him by a person who held the method along with a partner sworn to each other to keep it a secret. This is a very different spirit from that which the writers on bees have given in these pages for so long. Had I been in possession of the glass case I would very quickly have revealed the secret; but I am not, though being always glad when I can help readers forward I tell them all I am able to do. Fish glue is one of the most adhesive substances to employ, and in the apiary a little vinegar or acetic acid improves it and keeps it liquid and ready for use at all times. This is perhaps is what in some cases is sold as patent cement. It is not new to employ glue on things connected with the apiary. I have used it for nearly half a century, and on comb foundation, as I did gum since 1858 on combs, and from 1862 on foundations.

There are various ways of applying it. One is to have the glue in a shallow vessel kept hot over the boiler above a spirit lamp. Dip the edge of foundation into it, then press slightly the foundation to exclude the air. This done put them against the gauge blocks, of which a dozen should be used to steady them, and place on an inclined plane till they set. When the first is set it may be lifted, and the glueing repeated. Apply to full sheets and starters, and make doubly sure by dropping a little glue on the junction of wax and wood, holding the section in position. Do not forget that fish glue adheres to everything solid, whether the separate pieces

are the same material or not. It fastens wood to stone or glass, and stone will break before wood can be separated from it.—
A LANARKSHIRE BEE-KEEPER.

TRADE CATALOGUES RECEIVED.

W. Clibran & Son, Oldfield Nurseries, Altrincham.—*General Plant Catalogue.*

Thomas Painter, Smallwood.—*Dahlias.*



*All correspondence should be directed either to "THE EDITOR" or to "THE PUBLISHER." Letters addressed to Dr. Hogg or members of the staff often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post, and we do not undertake to return rejected communications.

Honeysuckle (Inquirer).—You infringed the Post Office regulations, and if you send us 2d. in stamps you will be out of our debt, and we will send you your envelope, also answer your question.

Spring Flowers (Florist).—The late Mr. Ingram of Belvoir wrote many valuable papers on spring flowers, but no book, so far as we know, on the subject. The late Mr. Fleming, when at Cliveden, wrote an excellent work on spring flowers, but it has long been out of print.

Growing Seakale (F. J.).—Referring to publications, you do not appear to have our "Garden Manual," which you would find useful. It gives instructions on growing Seakale for private use, also all other vegetables, useful fruits and flowers. Its price is 1s. 6d., post free 1s. 9d. The excellent method of raising Seakale from root cuttings is illustrated in Wright's "Primer on Horticulture" (Macmillans), price 1s. from booksellers. If you follow the instructions in those two cheap manuals you cannot very well fail.

Vine Leaves Scorched (D. H.).—You have indicated the cause. There has been too much moisture in the house, and the night temperature has been too low; possibly also the ventilators, on the latter account, have not been opened early enough in the morning for the dissipation of moisture. Fire heat, with early and careful ventilation, will improve the Vines, but do not go to the other extreme and make the atmosphere too dry. The change must be gradual, and the leaves will become firmer, as they should be.

Gloxinias Unhealthy (J. J.).—Plants resulting from very old corms not infrequently fail to grow freely, the leaves curling and being more or less rusted. Young plants also fail similarly if grown in the sun or a too dry atmosphere, or if the root action is defective through any cause. These plants enjoy a moderately humid atmosphere and shade from bright sun. They do not as a rule succeed on open stages over hot-water pipes or when exposed to dry currents of air, nor do they long remain satisfactory if the roots are allowed to become too dry on the one hand or the soil is soddened on the other.

Cyclamens (D. B.).—Plants when grown for market by experts in their culture and sold, as they usually are, just when in their best condition, would not continue producing equally fine flowers, even under the most favourable conditions—that is, if they had not been sold, but kept in the structures in which the plants were grown and there accorded the best attention. What may be termed the first fine flush of bloom (there is alliteration for you) exhausts the plants and soil to an appreciable extent, the successional flowers being the smaller in consequence. The disparity is bound to be more marked when the plants have undergone a journey and then placed in a structure differing from the one from which they were removed. At home they would receive just what they wanted in respect to temperature, atmospheric moisture, light, and support. These essentials cannot be found in due proportion in a mixed house of plants, and particularly a lofty conservatory, and especially, perhaps, if the pots are arranged on dry open latticework stages. All you can do is to take care that the soil never gets so dry as to shrink and form a slight fissure next the pots; also give weak clear liquid manure at every alternate watering, soot water as clear and pale as pale sherry being good for the plants. If they stand on a dry base, such as an open stage over hot-water pipes, that will be the reverse of good for them, and the pots should be syringed occasionally.

Cucumber Leaves Yellow (M.).—The leaf is large and pale in colour, indeed yellow in some places; there is no marked deficiency of chlorophyll granules in the cells, yet there would not, as you suggest, be any harm in applying a quarter of an ounce of sulphate of iron per square yard. It is preferably mixed with fine soil or sand to ensure equal distribution. The soil of the bed must be moist when it is applied. The leaves, however, if like that sent, are thin in texture, probably from being kept very moist. The leaf has much the appearance of deprivation of nitrogen by an attack of parasitic worms—that is, eelworm at the roots, these pests appropriating the nitrogen which should go to feed the plants.

Vine Leaves and Shoots Decayed (G. G.).—The decayed spots on the leaves and young wood are not caused by fungi, but by moisture remaining on the parts a considerable time, and appear to be due to water dripping on them from the roof, destroying the tissue. The mould on the stem of the bunch is a fungus (*Penicillium glaucum*) but it is a saprophyte (lives on decaying or dead organic matter) and is a consequence, not cause, of the damping off. You cannot do better than keep the house as dry as practicable, consistent with the health of the Vines, but the leaky roof should be put right as soon as possible. The cause of all the injury is excessive moisture, coupled with the recent fall of temperature, and the drip from the roof.

Chamaepeuce diacantha (E. T. H.).—A north room was not the place to promote an early and sure germination of the seeds. Had you placed the pot in gentle heat, a frame on a mild hotbed answering well, the seed would most probably have germinated in about three weeks. If you are in a position to do so shift the pot at once to heat, continue to shade, and keep the soil uniformly moist as before, and according as the seedlings (they sometimes come up very irregularly) are large enough transplant singly to small pots, moving them with a label, so as not to greatly disturb the rest of the soil. If kept growing in gentle heat a few plants may possibly be sufficiently well rooted to plant out early in June. Once they commence growing progress is rapid. These Fish-bone Thistles can be raised from seed in the autumn, but the plants are difficult to keep during the winter.

Elæocarpus serratus (H. D.).—You are right; this remarkably distinct plant is not often seen. Judging from the specimen sent, your observation that the plant is a beautiful object in a cool house is amply justified. The *Elæocarpus*, says the "Vegetable Kingdom," "furnish a few plants to which a slight degree of interest is attached. Those round, carved-looking and rugged-furrowed, bony-like articles, which are used as necklaces and bracelets, and sometimes mounted in gold, are the fruit of the Olive Nuts (*Elæocarpus*) deprived of their fleshy parts. The fruits of some of the species are used in Eastern curries, and also pickled, while some are eaten raw, such as those of *E. serratus*, which the inhabitants of Ceylon preserve in brine before they are ripe, and eat with a little oil to give them a flavour. Rumphius says these fruits are good to eat, but the use of them is rather adapted for killing time than for any nourishment that can be obtained from them."

Planting Apricots, Peaches, and Pears in the Same House (R. K. P.).—1, Apricots would not answer on the back wall of a lean-to house with Peach trees in front, nor do they do well together in the same house, as Apricots require far more air than Peaches in the early part of the year; indeed, Apricots need abundance of ventilation, and they are not so profitable as Peaches. 2, Pears and Peaches are not satisfactory grown together, unless it be in pots, so that the Pear trees can be placed outdoors after the fruit is well set and the weather become warm, or when danger from frost is past. To grow Peaches well they require a house to themselves, and unless well grown the fruit is not profitable. 3, Apricots give satisfaction under glass when the house is light and airy, ventilation being free on all occasions, except when frost prevails. They are, however, not generally satisfactory under glass, because they are kept much too close, and to suit other things are given unsuitable positions—the worst, as a rule, in the house, and failure is the consequence.

Ants in a Vinery (C. H. D.).—These often too familiar pests do considerable mischief in gardens and indoors. They are best extirpated by poison, and the arsenical solution given below is efficacious. It is, however, extremely dangerous, and must be used with the utmost caution, as it is fatal to animal life. Place 1 oz. of ordinary arsenic in an old iron pot with a quart of water, and boil gently until it is reduced to a pint, a little more rather than a little less, and to this liquid add half a pound of Demerara sugar, which will form a syrup. A little of this should be placed in saucers in the runs, around the nests or haunts of the ants. We repeat, this mixture must be used with the greatest possible care, not entrusting it to careless persons, or placing it where it is likely to be partaken of by any animal than that to be destroyed. To rid soil in pots or other places of ants dissolve a piece of camphor the size of a cob nut in 2 quarts of hot water, and when cool enough apply it, and the ants will be destroyed without prejudice to the roots or other parts of plants.

Names of Fruits.—*Notice.*—We have pleasure in naming good typical fruits (when the names are discoverable) for the convenience of regular subscribers, who are the growers of such fruit, and not collectors of specimens from non-subscribers. This latter procedure is wholly irregular, and we trust that none of our readers will allow themselves to be made the mediums in infringing our rules. Special attention is directed to the following decision, the object of which is to discourage the growth of inferior and promote the culture of superior

varieties. In consequence of the large number of worthless Apples and Pears sent to this office to be named, it has been decided to name only specimens and varieties of approved merit, and to reject the inferior, which are not worth sending or growing. The names and addresses of senders of fruit to be named must in all cases be enclosed with the specimens, whether letters referring to the fruit are sent by post or not. The names are not necessarily required for publication, initials sufficing for that. Only six specimens can be named at once, and any beyond that number cannot be preserved. They should be sent on the first indication of change towards ripening. Dessert Pears cannot be named in a hard green state. (E. F. B.)—1, Beurré Rance; 2, Bergamotte Esperen; 3, Catillac; 4, Sturmer Pippin; 5, Northern Greening; 6, Bramley's Seedling.

Names of Plants.—We only undertake to name species of plants, not varieties that have originated from seed and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in firm boxes. Slightly damp moss, soft green grass or leaves form the best packing, dry wool the worst. Not more than six specimens can be named at once, and the numbers should be visible without untying the ligatures, it being often difficult to separate them when the paper is damp. (P. J. A.).—A, Possibly *Jasminum Sambac*, send when in flower; B, *Fittonia argyroneura*, C, *Forsythia viridissima*. (Suburban).—1, *Citrus trifoliata*; 2, *Berberis Darwini*. (E. P.).—*Vinca major variegata*. (C. D.).—1, *Primula rosca*; 2, *Primula denticulata*. (E. L. C.).—A *Genista*, but unable to identify species without leaves. (R. H. R.).—*Ribes aureum*. (J. C. H.).—1, *Valeriana officinalis*; 2, *Narcissus*, flower abnormal; 3, *Pulmonaria officinalis*; 4, *Dentaria digitata*; 5, *Spiraea cratægifolia*; 6, the seed of a tropical Palm.

COVENT GARDEN MARKET.—APRIL 25TH.

FRUIT.

	s.	d.	s.	d.		s.	d.	s.	d.	
Apples, per bushel	2	6	to	10	0	Lemons, case	10	0	to 15	0
„ Nova Scotia, barrel	12	0		24	0	Peaches, per doz.	0	0		0
Cobs	45	0		50	0	Plums, per half sieve ..	0	0		0
Grapes per lb.	1	6		4	0	St. Michael Pines, each ..	2	0		6
„ new, per lb.	3	6		5	0	Strawberries per lb. ..	1	6		3

VEGETABLES.

	s.	d.	s.	d.		s.	d.	s.	d.		
Asparagus, per bundle ..	4	0	to	5	0	Mustard and Cress, punnet	0	2	to	0	0
Beans, Kidney per lb. ..	0	6		1	0	Onions, bushel	3	6		4	0
Beet, Red, dozen	1	0		0	0	Parsley, dozen bunches ..	2	0		3	0
Carrots, bunch	0	3		0	4	Parsnips, dozen	1	0		0	0
„ new, bunch	0	9		1	0	Potatoes, per cwt.	2	0		4	6
Cauliflowers, dozen	1	6		3	0	Salsafy, bundle	1	0		1	5
Celery, bundle	1	0		1	3	Scorzoneria, bundle	1	6		0	9
Coleworts, dozen bunches ..	2	0		4	0	Seakale, per basket	1	3		1	6
Cucumbers, dozen	1	6		3	0	Shallots, per lb.	0	3		0	0
Endive, dozen	1	3		1	6	Spinach, bushel	1	6		3	0
Herbs, bunch	0	3		0	0	Tomatoes, per lb.	0	6		0	0
Leeks, bunch	0	2		0	0	Turnips, bunch	0	3		0	9
Lettuce, dozen	0	9		1	0	„ new, bunch	0	8		0	10
Mushrooms, punnet	0	9		1	0						

AVERAGE WHOLESALE PRICES.—OUT FLOWERS.

Orchid Blooms in variety.	s.	d.	s.	d.		s.	d.	s.	d.
Arum Lilies, 12 blooms ..	1	6	to	3	0	Pelargoniums, 12 bunches	6	0	to 9 0
Azalea, dozen sprays..	0	4		0	9	Pelargoniums, scarlet, doz.			
Bouvardias, bunch ..	0	6		1	0	bunches	4	0	6 0
Camellias, dozen blooms ..	0	9		2	0	Primula (double), dozen			
Carnations, 12 blooms ..	1	6		3	0	sprays	0	6	1 0
Daffodil or Lent Lily ..	1	6		2	0	Primroses, doz. bunches ..	1	0	2 0
„ single	2	0		6	0	Pyrethrum, dozen bunches	2	0	4 0
Eucharis, dozen	2	0		4	0	Roses (indoor), dozen ..	1	0	2 0
Gardenias, per dozen ..	2	0		4	0	„ Tea, white, dozen ..	1	0	3 0
Hyacinths, dozen spikes ..	0	6		0	9	„ Yellow, dozen	2	0	4 0
Lilac (French) per bunch	2	6		4	0	Roses (French), per dozen	3	0	6 0
Lilies of the Valley, dozen						Roses, Safrano (English),			
sprays	0	6		1	0	per dozen	1	6	2 0
Lilium longiflorum, per doz.	2	0		4	0	Roses, Maréchal Neil, per			
Maidenhair Fern, dozen						dozen	1	6	5 0
bunches	4	0		6	0	Tuberose, 12 blooms..	0	6	1 0
Marguerites, 12 bunches ..	2	0		4	0	Tulips, dozen blooms ..	0	3	0 6
Mignonette, 12 bunches ..	3	0		6	0	Violets, Parme (French),			
Myosotis or Forget-me-						per bunch.. .. .	2	0	3 6
nots, dozen bunches ..	2	0		4	0	Violets (French), per bnch.	1	0	1 6
Narciss, various (French),						Violets (English), dozen			
dozen bunches	2	0		4	0	bunches	0	9	1 0
Orchids, per dozen blooms	1	0		9	0	Wallflowers, doz. bunches..	4	0	6 0

PLANTS IN POTS.

	s.	d.	s.	d.		s.	d.	s.	d.		
Arbor Vitæ (golden) dozen	6	0	to	12	0	Ferns (small) per hundred	4	0	to	8	0
Arum Lilies, per dozen ..	6	0		12	0	Ficus elastica, each	1	0		7	6
Aspidistra, per dozen ..	18	0		36	0	Foliage plants, var., each	2	0		10	0
Aspidistra, specimen plant	5	0		10	6	Genista, per dozen	6	0		12	0
Azaleas, per dozen	18	0		30	0	Hyacinths, per dozen ..	5	0		9	0
Cineraria, per dozen ..	6	0		9	0	Lilium Harrissi, per dozen	18	0		30	0
Cyclamen, per dozen ..	9	0		12	0	Lycopodiums, per dozen ..	3	0		4	0
Dracæna terminalis, per dozen	18	0		42	0	Marguerite Daisy, dozen ..	6	0		12	0
Dracæna viridis, dozen ..	9	0		24	0	Mignonette, per doz. ...	6	0		9	0
Ericas, per dozen	9	0		24	0	Myrtles, dozen	6	0		9	0
Euonymus, var., dozen ..	6	0		18	0	Palms, in var. each	1	0		15	0
Evergreens, in var., dozen	6	0		24	0	„ (specimens)	21	0		63	0
Ferns, in variety, dozen ..	4	0		18	0	Pelargoniums, per dozen	12	0		18	0
						„ scarlet, per doz. ..	4	0		6	0

Roots in variety for planting out, in boxes or by the dozen.



MIXED FARMING.

Now that attention is fully aroused to the importance and true value of mixed farming, and action is being taken to correct the faulty practice of extremes, it will be well for every aspect of it to be discussed so far as is possible. We cannot hope to meet every case, but taken broadly it may be said to consist of the production of crop and stock upon which a reasonable profit is known to be possible, and of all or most of the food required for the farmers' household, and for the economic sustenance of the whole of his live stock. The term of economic sustenance is of wide significance, embracing all food, green and dry; timely cropping, abundance without waste, judicious feeding, profitable farming. It goes still farther, and points to live stock well nourished from birth to maturity, from purchase to sale, and a total avoidance of that wretched system of alternate short commons and repletion, under the strain of which so many animals die outright, or if they live fail to afford anything like a profit.

For small farms there are many ways of turning the land to account. One of the best seen last year was in the Midlands. It was an upland farm so well managed that the hay crop was really a good one, and the aftermath abundant, showing clearly that the permanent pasture was really cultivated, and the fertility of its soil well sustained. That this was the case generally on the farm was evident, crops on the arable land all being excellent. They consisted of Oats, Swedes, Mangolds, Cabbage, Kale, Carrots, and Potatoes, so well apportioned as to afford pleasing evidence of a well-considered plan, the only fault being in the distance of the Cabbage and Kale from the place of consumption—a trifle we admit, but still worthy of attention. Life is made up of trifles, time itself of moments.

Subsequently we saw at Mr. Robert Fenn's (the famous raiser of so many of the best sorts of Potatoes) at Sulhampstead some grass land with a wide margin of arable land, on which were crops for consumption by stock grazing on the pasture. The plan is an admirable one. Think what a boon a crop of Green Maize in such a position would be when pasture herbage runs short in August or September, as it so frequently does; or a patch of Lucerne in such a trying time as we had last midsummer. In late autumn or early winter, too, when cows and store cattle are withdrawn from pasture to the yards, sheepfolds might be kept going on the pasture by using roots, Cabbage, or Kale grown close by, and so enrich the pasture for another season. We need not enumerate more crops for such a position, what to grow is altogether a matter of expediency; but we are certain that very much more may be done in this way on many a farm than has been done. To ask a dairy farmer who has all his land under permanent pasture to grow his own corn even may seem a bold thing. We do so entirely in his interest; we go farther, and say positively that if, in addition to corn, he would have such fodder crops as would answer with him, as well as some roots, the common necessity for agistment of cattle would cease altogether. More—much more than this, he would be able to make due provision of food for winter; his stock would be better nourished, and he would avoid losses of animals, the cause of which is mainly owing to low diet and improper foods.

But, we are told, if land is so broken up it will absorb so much manure that the pasture will suffer. Does not pasture suffer now? Is there any systematic use of manure upon it

beyond the mere excreta of such cattle and sheep as are turned out to graze upon it? Can any reasonable person suppose that to be sufficient to bring a full crop of hay—a full bite of herbage? We hold that very many dairy farmers would be much more prosperous if their holdings were reduced by one-third, or even one-half, if only they could be induced to thoroughly cultivate the remainder thoroughly. We have no faith in the popular cry for small holdings as a panacea for hard times, but we are convinced that the only holdings of any size that can be made to answer are those which are well within the scope of the tenants' means, and which are in the hands of men who possess the requisite capacity to apply such means wisely and well. This is high farming of the right sort; sound and thorough, it covets nothing like notoriety, but simply aims at good work well done, full crops, well nourished stock, judicious management, and, above all things, a fair profit from every rod of land upon the holding.

WORK ON THE HOME FARM.

He was a wise man who last autumn sold some of his cows in order to obtain enough money to buy food for the others. It is always better to feed a few cows well than many badly. Unfortunately so many have been fed badly for many months that more losses among them are inevitable this spring, a full bite of young grass causing so much scour that the weaker animals succumb to a strain too severe for their enfeebled bodies. We have heard of several ewes dying from exhaustion, as well as cows and store beasts. All this is outside sound practice we are aware, but it must not be passed over for such a reason. The men who have such losses are mostly tenant farmers who ought to know better.

Green food is now abundant. Rye is in full cut, and is also being folded. Where it is only wanted for sheepfolds the folding must be pushed on, as the season is so forward that Rye will soon be in ear. A second growth may be had if required, either for green fodder or to harvest in view of seed corn and straw for sale. This depends upon our cropping scheme. With the abundance of green food now ready it will probably answer best to plough in the Rye after the first folds are off in view of a more useful autumn crop of Turnips, Cabbage, Kale, or an earlier crop of Green Maize. Look forward, consider ways and means, bear in mind the frequency of drought and bare pasture in autumn. Rather let the effects of bad seasons influence the cropping than those of good ones. By thus being ready for an emergency we always have enough food, often too much. We cannot too strongly insist upon the importance of this: a surplus of food, but never a surplus of live stock over food supply. This is a matter wherein graziers require protection against themselves in the guise of Government supervision. The cruelty to which underfed cattle are subjected is a scandal and shame, with which the Board of Agriculture would do well to grapple. Shelter, food, and numbers all demand attention now in view of having such matters upon a sound footing before another autumn, and of giving immediate attention to the provision of enough food by cropping now.

METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude, 111 feet.

DATE.		9 A.M.					IN THE DAY.				Rain.
		Barometer at 32°, and Sea Level.	Hygrometer.		Direc- tion of Wind.	Temp. of soil at 1 foot.	Shade Tem- perature.		Radiation Temperature		
			Dry.	Wet.			Max.	Min.	In Sun.	On Grass.	
			Inchs.	deg.			deg.	deg.	deg.	deg.	
1894.	April.										
Sunday ..	15	29.777	53.5	51.0	S.E.	50.1	62.0	48.5	108.6	43.8	0.152
Monday ..	16	29.415	49.6	46.8	S.	50.1	55.0	47.1	85.3	40.3	0.060
Tuesday ..	17	29.527	49.9	47.2	W.	49.2	59.4	42.9	104.2	36.0	0.076
Wednesday	18	29.677	51.0	48.3	N.E.	43.9	61.3	41.3	99.9	34.1	0.053
Thursday ..	19	30.0.3	46.1	45.1	N.	48.8	49.9	42.4	62.6	37.2	—
Friday ..	20	30.177	45.4	42.9	E.	43.0	50.6	42.1	59.8	42.3	—
Saturday ..	21	3.100	43.8	39.7	N.E.	47.6	57.1	37.6	102.2	29.1	—
		29.815	43.5	45.9		49.0	56.5	43.1	88.9	37.5	0.341

REMARKS.

- 15th.—Dull and showery till 11 A.M., then fair with occasional sunshine; showers and lunar halo at night.
 16th.—Rain from 7 A.M. to 9 A.M., and frequent slight showers during the day, but bright sun at times.
 17th.—Bright sunshine early; dull and rainy from 8 A.M. to 11 A.M.; alternate sunshine and spots of rain after.
 18th.—Fine with some sunshine in morning; heavy shower at 4 P.M. with distant thunder, and showers after.
 19th.—Overcast throughout.
 20th.—Overcast all day.
 21st.—Overcast early; bright and sunny from 10 A.M.; clear night.

Owing to the cloudy sky the day temperatures have not been so high as in the previous week, but the average temperature is still above the mean.—G. J. SYMONS.



SUCH was the expression of one of our foremost gardeners on a bright and beautiful day at the close of April—a day following refreshing showers—in describing the weather of the year up to date. Here is the summary:—"A winter that did no harm, destroyed scarcely anything that we wished to preserve; next came sun to dry and warm the soil, enough to accomplish that important purpose and no more, yet we began to look and wish for rain; then just at the right time a cold wave passed over, arresting the too rapid expansion of fruit blossom, but not injuring it, and in its wake came welcome showers with sunny alternations—warmth without blight, and the results we see if we look around—clean, free, healthy growth, the growth of an ideal season."

A glance, however rapid, over the great charge of this gardener—of park and woodland drive; of avenues of ancient and modern fruit trees shedding their myriads of petals; of young orchard trees starting into vigorous growth from almost knee-deep herbage; of the branches of wall trees clustered with swelling fruit; of field-like breadths of vegetable ground, some in full yield and others full of promise by the up-springing plants; of the long fruit ranges of glass, with ripe and advancing crops of Grapes, Melons, Cherries, and Strawberries—all in profusion; with health and brightness in exotic plants and flowers; and last, but not least, the pleasure garden filled with charming colour and combinations—when we see all this—all the present health in vegetation, also towering Chestnuts like mountains of foliage and flowers, golden showers of Laburnum, in contrast with the Lilacs, and White Thorns laden with fleecy "May blossom" in April the appositeness of the remark is forced upon us—an ideal season.

"But all this must have reference to the south" our northern friends will be saying; and they will be right. It is not far from the banks of the Thames and where the famed stream is silvery that so much beauty was existent in April—so much fulness in park and gardens in the early year. The "May" in April was covering the hedge-row trees in the approach to historic Runnymede and the rest within the home demesne of Royal Windsor, and it was Mr. Owen Thomas who so pithily characterised the season with which he has been so well satisfied, and not without good reason. He does not belong to the pessimistic family who appear never so happy as when preaching the doctrine of despair embodied in bad climate, bad crops, bad laws, bad land, bad luck, and bad everything; nor, on the other hand, is he an ultra-sanguine enthusiast. There are few more level-headed men than he—a man of sober thought, and keeping well in mind the lessons of experience. He believes in the law of compensation as an established fact, and has observed that if Nature is hard on the husbandman in one year, as through the drought of last season and the consequent scant herbage, she is bountiful in another in the luxuriance of growth after a summer's rest. He believes in making so-called "bad" land better, more productive, by the cultural skill that it is in the interest of every tiller to acquire and invest. He believes that bad luck vanishes under the conquering force of better methods and prudent foresight, and he believes firmly in the future of his country, notwithstanding temporary drawbacks and periodic terms of depression, if every man will learn the lesson he ought,

and strenuously endeavour to do his duty. Hundreds fortunately share in this belief, men who look facts in the face and find that neither on the European continent nor in America are there so few natural or artificial impediments to success in the pursuit of soil cultivation as have to be encountered in the British Isles. It is true that many persons do not share this view, and all the better for those who do—men who have faith in the future, and who ever keep in mind the grand and imperishable truth that faith without works is dead. These are not the men who rest in the delusion that everything is bad—but themselves.

What, then, was there to see at Windsor in April to justify the above verdict in reference to the season being an ideal one? It may be as well to begin by a bold statement—something that will perhaps startle those who are prone to sing the praises of other lands at the expense of their own. Here is the venture. When "Victoria, our Queen,"—whose goodness no persons know so well as those who come in near contact with her—viewed from the royal apartments the terrace flower garden on the first morning after the return of the Court from the Continent a scene as bright and fair would be presented as even Italy could not excel. Perhaps at no time and in no season has this beautiful enclosure been so delightfully attractive as it was then and is now; beautiful, too, in its simplicity, so far, at least, as regards the masses and margins of flowers—sheets of yellow and crimson Wallflowers; groups of white and purple Honesty rising above creamy masses of Polyanthus; coloured forms of these beautiful flowers, also Primroses and Auriculas, forming a sparkling groundwork; cushions of pink in *Silene pendula*, with contrasting colours in *Violas* and *Pansies*; broad rich margins of *Aubrietias* and golden tufts of *Pyrethrum*—these, and other simple spring flowers, tastefully blended with each other, and relieved by choice, chaste Evergreens and Conifers, with appropriate statuary in harmony with the rich surroundings, and the central fountain producing slender arching jets that glistened in the sunlight—these, in combination, produced a scene in April as satisfying as the most exacting critic could desire. In this royal enclosure slopes descend from the terrace in the smoothest and greenest of lawn on which the beds are formed, the broad surrounding walk being in keeping by its smooth dressing of new gravel. Altogether it was as perfect a dressed flower garden scene as the mind could conceive, and this in April, with familiar, homely flowers. Nor is it provided for Royal eyes alone, for on Saturday and Sunday afternoons the public have free access, so that those who can may see for themselves if aught is set down here that is not true. It was an ideal garden on an ideal day in this, up to then, ideal season.

Then if the gardening visitor could go farther afield, pass down the majestic avenue, and find entrance to the gardens at Frogmore, he would see much of a different kind, but not to him less gratifying. Houses filled with ripe Grapes; excellent, uniform, well finished crops of Black Hamburgs and Foster's Seedling would meet with approval, and others "coming on" in various stages, including a fine promise of Duke of Buccleuch. He would see the difference in one house between Vines planted—all at the same time—in outside and inside borders, the former covering the roof with fruit, the latter not yet bearing. There is a greater promise of Grapes than ever at Frogmore, while Peaches abound in the long ranges of healthy trees.

The visitor would also see Strawberries almost everywhere—in warm houses and cool, also planted out in pits to "meet" the outdoor supply. Yet with all the glass room provided there did not seem to be space enough for the thousands of pots of this favourite berry, and the fruit room was packed full of plants from which ripe fruit, cool and delicious, was being gathered. *La Grosse Sucrée* is still the best of the earlies; fruits large, well coloured, firm, and full flavoured. This is the variety mainly relied on for first and successional crops. Others are grown, and of these the one to be increased the most, or at least as much

as possible, because of its proved merit, is Royal Sovereign. Mr. Thomas speaks in the highest terms of approval of this new Strawberry, and it bids fair to become a standing sort in the Royal Gardens.

Another Queen's favourite fruit is the Cherry. The earliest crops are over from trees in pots, but many more are bearing ripe clusters, with others still to follow, while the wall trees are laden with fruit, one cased in with frame lights to advance the ripening of the crop to prevent a break in the supply. They are not above shifts and contrivances in the Royal Gardens if anything is to be gained; in fact, Frogmore is a great horticultural school of utility.

Ripe Melons have been mentioned. Of these there has been no lack for a long time. The Frogmore Seedling leads the way in earliness, and judging by the laden trellis it might also be said in productiveness; fruits medium sized, round, distinct by the creamy white colour, and with a refined flavour that does not pall.

Then we enter a low lean-to pit, stoop down, look up, and see such a canopy of Tomatoes as probably was never elsewhere witnessed in April. The roof laden with ripe and ripening fruit—such a crop as hundreds of persons would rejoice in during the Tomato season in the summer. This is the Frogmore Selected, and last week certificated; plants raised from seed in October and fruiting in 9-inch pots plunged to the rims in a narrow bed. The roof appeared a dense mass of fruits from end to end, those ripe being in brilliant colour, firm, and of excellent quality. Frogmore Selected it has been suggested is not the best of names, but the selector remarked it at least exactly represents the fact; it is the best variety selected from the best fruit, especially chosen as likely to produce something good. It is precisely in this way that more new varieties of fruits and vegetables have been raised than the public recognise, and improvement by selection is within the means of every observant cultivator.

The outdoor vegetable department must be passed with the remark that Ellam's Early Cabbage has not "bolted" at Frogmore. Winter Cos Lettuces, Hicks' Hardy and Bath Cos have passed the winter scathless. Tied-up plants at the front of south walls are ready for use, and there are thousands more to follow in the open—a valuable staple crop. The Cabbage Lettuces have not escaped so well, and for them at least either the season or position was not quite ideal.

Asparagus bed extension is always going on at Frogmore, and Mr. Thomas is of opinion it should go on generally much faster than it does in this country. The beds in the Royal Gardens are made in a simple way; 4 feet wide trenches are made, not very deep, but somewhere not far from the Winter Greens. As these serve their purpose the stumps are pulled up and thrown into the trench with any other refuse that is best out of sight, the excavated soil thrown on, and the preparation is complete for the always welcome and never too much Asparagus.

The under-glass plant department cannot be dwelt on, worthy as it is of note, but Chrysanthemums must have one line. They are in 6-inch pots, as robustly sturdy as plants could be. Thousands are grown, and produce a magnificent display in the autumn. Yes, the verdict is justified—the great abundance and thrifty condition of crops proclaim the fact that whatever the future weather may be the season up to the end of April was an ideal one at Frogmore.—A WITNESS.

QUESTIONABLE ADVICE.

"CLOSE the house early in the afternoon with sun heat, and maintain plenty of atmospheric moisture by frequently damping available surfaces." This advice has been given with respect to fruit forcing as long as I can remember, and yet in spite of my veneration for things ancient and universally cherished I must question the soundness of it.

First I will try to ascertain why the advice is given, and the visible results of following it. We know that often during the spring months there is bright sunshine with a dry harsh atmo-

sphere. At such a time, if we could keep down the temperature of our houses below the danger point without opening the ventilators at all we would gladly do so, but this is often impossible, and especially so in our modern built houses with slim rafters and large panes of glass. Indeed, during such weather as we had in March this year I was often obliged to open wide every ventilator, including the doors, to keep temperatures down anywhere near 80°.

Vines, in particular, being so much later than other plants in starting root action, show sooner the effects of a too rapid exhalation from their leaves, and one is naturally anxious to see the embryo bunches stand upright, or at least straight again, and the leaves restored to their proper position. This may generally be quickly effected by closing early in the afternoon and damping heavily. Besides this, the bunches will be materially lengthened, the stems will have stretched further up or across the trellis, the leaves will have added to them a measurable breadth by the following morning, and we flatter ourselves that the Vines are growing wonderfully. But is the extra length and breadth we get worth calling growth? Is it not rather elongation and expansion of the cells? Do we add a single cell by this vapour-bath treatment? If not, what must be expected as the after results? I will not attempt to enumerate all, but some that strike me just at present are—collapse of cells in the stems and consequent flatness; collapse of cells in the fruit and consequent shrivelling; thinness of texture in the leaves and consequent wartiness; scorching, or early discolouration, with its natural effects on the ripening of the wood.

Now the Tomato diseases have taught us that the vapour-bath treatment is wrong; and I believe it is a fact that Tomatoes are better grown now, and are of better quality than they were before a more rational mode of culture was forced on us. For growing Cucumbers, French Beans, and some plants grown for their large foliage where there is no necessity to build up a solid and lasting structure, the early closing and heavy damping will do little harm, but I ask your readers to consider the matter over in regard to fruit-growing.—WM. TAYLOR.

AURICULAS AT THE DRILL HALL.

I HAVE for so many years recorded my impressions of the shows of the southern section of the National Auricula Society that I am conceited enough to think that there are some few growers of this charming flower who would like to know what I think of their last Exhibition on the 24th ult. There are always variations of opinion even on what seem to be plain facts, and therefore I am quite prepared to find that some may not agree with mine. This I have generally found to be the case, and so shall not attempt to defend myself from any criticism that may be passed on these observations.

With regard to the extent of the Exhibition it strikes me that it was one of the largest held for many years, and that in one respect that was especially noticeable—namely, that it was in reality as well as in name a southern Exhibition. There have been shows when they have been pretty well out of it, and the northerners have swept nearly everything away, but at this Show the southerners came out in strong force, especially the Reading contingent. Some time ago when I had seen Mr. Henwood's collection, I told him the day would come when he would take the foremost place, and this has come sooner than he at any rate expected, for in a strong competition he, without the slightest hesitation, was placed first; but not only so, others of the Reading group of growers were well to the front in the prize list—a pleasing contrast to the time when only a couple of growers put in an appearance for the south, and I had painfully to contrast the state of the Auricula in the south as compared with what it was in my younger days. The example which Mr. Henwood has set has been contagious, and a band of growers has sprung up in a town which has always been famous for its love of flowers. Mr. Henwood is another instance of the fact that victory does not always go to the large battalions. I have seen not only his collection but those of many of his competitors, and I do not think that it is one-fourth the size of some of them as far as numbers of plants are concerned; but then he takes care to grow none but the best varieties, and he grows them in a most perfect manner. In saying this I am not forgetful of the northern growers in the persons of the Rev. F. D. Horner, Mr. Ben. Simonite, and Mr. Patterson, who made a great fight of it.

I think there was very little difference of opinion as to the quality of the flowers, namely, that in a general point of view they lacked that smoothness and refinement which are so great a charm in the Auricula. It seemed to me that this was much more the case with the northern than with the southern flowers, and I heard from one grower that they had had hot burning sun during

the day for some time and ice at night. This probably in some cases necessitated the application of fire heat, which, I think, never suits the Auricula. In some cases, too, the flowers were smaller than usual, but I for one would a great deal sooner see this than over-size with coarseness. There was no want of refinement in Mr. Henwood's blooms, which were smooth and quite in character. Another noticeable feature in this stand was that there were only two selfs in it and four green-edged flowers, the former being the most plentiful and the latter the scarcest of the four classes in which the Auricula show is divided.

With respect to those sorts which came most prominently forward, I think one may say that the Show tended to establish a few points. Thus, with regard to green edges, there can be little doubt that Simonite's Rev. F. D. Horner must be considered as our best flowering. Prince of Greens, with its weak eye, and Colonel Taylor, with angular paste, I think must fall into the background. Then, again, in reference to grey edges, it is manifest that no flower has since been raised that can compete with George Lightbody. It took the five prizes in the class for single varieties, and was well shown in many collections. As to the white edges, nothing as yet has been sent out that can beat Acme, and it occupied a very prominent position both in the class for single varieties and also in the collections. In selfs the battle seems to run most between Mrs. Potts and Heroine, differing much in colour and in character of growth. To my mind the latter is the more desirable variety, for although the pip of Mrs. Potts is very flat and well formed, yet the length of the flowering stems and the looseness of the truss detract considerably from its merits, and on the whole I prefer Heroine. I was greatly pleased to find that the late Mr. Woodhead's flowers still hold their high position. I have noticed that his Black Bess has become somewhat more refined, and lacks the roughness which used to characterise it; while Mrs. Dodwell as a white edge and George Rudd as a grey have again proved themselves to be most useful flowers; and while, of course, not equalling George Lightbody or Acme, still evidently hold a high place in the estimation of Auricula growers, and only make one the more regret that he was taken away from us when his work was only just begun.

I have to notice that seedlings were exhibited which may some day occupy a good position in their several classes. It would be hardly right perhaps to class under this head that fine flower Dr. Hardy, raised by Mr. Simonite, which took the premier prize as the best Auricula in the Show; but the same raiser's T. E. Henwood, which took the first and second prize in the green edge class, promises to be a leading variety, and shows that Mr. Simonite is rightly anxious to add to a class in which there are so few first-rate flowers. The green of this variety is very bright, the body colour dark, the tube bright, and the paste solid. We cannot, of course, say how it may develop in the future, for we have seen many a seedling whose after conduct has belied the promise of its early youth; but even although it may have gained high distinction as a seedling, it has passed out of growth altogether. Two fine selfs obtained prizes—Mrs. Phillips, a good purple, raised by Mr. Phillips; and Raven, a very dark almost black self, raised by Mr. Simonite. To these may be added a yellow self (Buttercup), raised by Rev. F. D. Horner, although this is a class which does not much touch the fancy of the grower of Show Auriculas. These observations are, as I have said, of a general character, and the ample report you have given of the Show will satisfy all who want to know more of its details.—D., Deal.



CYPRIPEDIUM ANNIE MEASURES.

THIS distinct hybrid *Cypripedium* (fig. 55) was exhibited by Mr. R. J. Measures, Cambridge Lodge, Camberwell, at the Drill Hall, Westminster, on the 24th ult., and a first-class certificate was adjudged for it by the Orchid Committee of the Royal Horticultural Society. It is the result of a cross between *C. bellatulum* and *C. dayanum*. The flower, although not unusually large, is of an attractive appearance, creamy white, dotted with rosy purple the lip being similarly faced.

ORCHID JOTTINGS.

LIKE many more admirers of Orchids I wended my way to the Drill Hall, Westminster, on the occasion of the last meeting of the Royal Horticultural Society, and, despite the counter-attractions in the form of Auriculas and Roses, was gratified to find a good display of my favourite plants. Orchids have been, as a rule, generally well represented at these gatherings, and doubtless will be so long as the interest in them continues to increase. It is a matter for regret, however, that the authorities could not apparently see their way clear to act upon my previous suggestion—viz., in grouping the Orchids together as much as possible. This may



FIG. 55.—CYPRIPEDIUM ANNIE MEASURES.

come in time, as, according to the proverb, do all things to those who wait.

As is customary the well-known St. Albans firm sent some choice new species and varieties, amongst which *Cœlogyne Swianiana* was most noticeable. This is a dwarf growing plant, resembling *C. Dayana* in some respects, as for instance the method of producing flowers in drooping racemes, but it is undoubtedly quite distinct from that species. The petals and sepals are creamy white, the lip, too, being of that shade or pale buff, veined and margined chocolate brown. An award of merit was granted for this species, a similar honour going to Messrs. Sander & Co. for the new *Phaius Oweniæ*. The last named is very distinct, and the flowers are rich in colour. The sepals and petals of the blooms on the plant staged were reddish brown, the tube of the lip yellow, and the front portion rich purplish crimson. We shall probably hear something further of this *Phaius*.

Although not staged in a very prominent position, a plant of the beautiful *Lælia cinnabarina*, sent by Mr. Appleton, Weston-super-Mare, attracted notice. This specimen bore three large spikes, one of which carried nine and another ten flowers, standing well above the foliage. The blooms were above the average in size, and of a rich orange scarlet colour, the lip having a finely crimped edge. It is a pity this brightly coloured *Lælia* is not more extensively cultivated, for although introduced in 1836 it still comes within the category of scarce Orchids. To a certain extent the same remark applies to *Miltonia stellata*, known also as *Cyrtorchilus flavescens*. A fine specimen of this was exhibited by Messrs. B. S. Williams and Son, to whom an award of merit was adjudged. The plant in question bore a number of spikes of medium sized flowers.

In most gardens where Orchids are grown may now be seen various forms of *Dendrobium nobile*, and it has been my fortune to see some charming varieties. Never, however, have I come across a more beautiful form than that exhibited at the Drill Hall, Westminster, on the 24th ult. by Mr. W. G. Cummins, gardener to A. H. Smee, Esq., The Grange, Wallington. The plant staged bore a profusion of flowers large in size and distinct in colour. The sepals and petals were broad, white, with a rosy purple tint.

towards the margins. The lip was similarly coloured to the petals, and in addition had a dark crimson blotch in the throat. Varieties of *Odontoglossum crispum* are as numerous, and two additions were forthcoming from Mr. De Barri Crawshay and Messrs. Hugh Low & Co. The former had a splendid form in *O. crispum Florie*, and the Clapton firm staged *O. crispum Lowianum*, a distinct variety.

Relative to my remarks on page 295, anent the fine display of *Odontoglossums* made at a recent meeting of the Royal Horticultural Society by Mr. H. Ballantine, gardener to Baron Schröder, a correspondent reminds me of the splendid spike of *O. crispum apiatum*, exhibited by the same grower at a previous gathering. This spike measured 2 feet in length, and bore thirteen flowers, each of which was nearly 4 inches in diameter. The sepals and petals were an inch wide, white, with fringed edges, the surface being characterised by large blotches of rich chocolate brown. A tinge of yellow at the crest of the lip considerably enhanced the flower, and it is said to have been the finest form of this popular Orchid ever exhibited. As noted at the time, the Orchid Committee of the Royal Horticultural Society recommended a small gold medal for it.

There seems to be some doubt as to identity of *Sobralias*, and according to Mr. W. Watson of Kew, no mean authority, the species figured in the "Botanical Magazine," t. 4570, as *S. sessilis* was not that, but *S. decora*. With the exception of the plant at Kew I have never seen *S. sessilis* in cultivation, and should be glad to hear, through the *Journal of Horticulture*, of any instance where it has been successfully cultivated. *S. sessilis* is a beautiful species, and although originally introduced from British Guiana in 1840, it is somewhat rare, and is seldom seen other than in very choice collections. The flowers are about 2 inches across, and of a striking character. The sepals and petals of the species figured as *S. sessilis* in the "Botanical Magazine" are white, while the lip is a yellowish hue, tinted rose pink; but Mr. Watson in the "Garden and Forest" writes thus of the true *S. sessilis*:—"It is easily distinguished from all other cultivated *Sobralias* by its leaves being purplish on the under sides and the stems covered with short black hairs. The stems are a foot high, and the terminal flowers are as large as those of the spurious *S. sessilis*, deep rosy mauve, with a crimson labellum tinged with yellow."

There is rather a fine collection of *Cirrhopetalums* in the Royal Gardens, Kew, one of the newer species of these being *C. robustum*. So far as I know this plant, which is not a particularly large one, has not flowered yet; but an authority informs me that a specimen of *C. robustum* in the collection of Colonel Trevor Clarke bloomed about a year ago. According to the following description published some months since it would appear that this *Cirrhopetalum* is a remarkable Orchid:—"Scape very stout, a quarter of an inch in thickness at the base, bearing eleven flowers and a few undeveloped buds at the apex. Umbel 7 inches across; bracts an inch long; sepals about 2 inches long, greenish yellow, reddish purple at the base; petals half an inch long, paler than the sepals; lip fleshy, recurved, cordate-oblong, nearly half an inch long, with a pair of stout teeth, and coloured deep red-purple; column dull yellow." My experience leads me to say that most of the *Cirrhopetalums* thrive best when grown in baskets near the glass of a well-heated structure.

A short time since whilst viewing a collection of Orchids I noticed a plant of *Arachnanthe* (*Vanda*) *Cathcarti* in bloom, and observed to my guide that it was not generally cultivated. It is a beautiful plant when well grown, the waxy flowers being very distinct. The blooms on the plant alluded to had silvery white and pale yellow sepals and petals, these being streaked with rich reddish brown. Generally the lip is yellow, the side portions having red stripes. In some gardens this Orchid is known as a *Vanda*, but in others it is termed *Arachnanthe*. It is a native of the Eastern Himalayas, and is said to have been discovered in 1848 by Sir Joseph Hooker. As an instance of how confusing the nomenclature of Orchids is to amateurs, it may be mentioned I have seen the above plant labelled *Esmeralda Cathcarti*. At a recent meeting of the Royal Horticultural Society a form of it was certificated as *Vanda Cathcarti grandiflora*. Dr. Lindley, I believe, classed it as a *Vanda*, although it had been previously named *Arachnanthe* by Blume.—SPECIALIST.

ODONTOGLOSSUM CERVANTESI.

IMPROVED forms of this Orchid are occasionally appearing, although some of these are at present comparatively rare. The broad petalled variety *decorum* and the spotted *punctatissimum* or *oseum* are perhaps the best known variations from the type, but

better kinds than these are evidently in store. A representative of a well-known firm of Orchid importers showed me recently a magnificent variety not yet named. The flower was as large as the best types of *O. Rossi*, and of great substance and beauty. All the varieties are easily grown, and should be kept well up to the glass in the cool house.

VANDA SUAVIS.

This noble Orchid should be included in all collections. Whether in or out of bloom it is always attractive, and is not difficult to grow. An intermediate temperature, such as that of a *Cattleya* house, suits it best while growing; but in the winter it requires less heat than *Cattleyas*, 40° being a suitable minimum. This *Vanda* requires abundant head and rooting space. Large pots are the best receptacles for the plants, and fresh sphagnum moss and charcoal should be used as a compost. In potting, as many of the aerial roots as possible ought to be covered with the moss; but as these are very brittle, care is necessary in handling them. Old plants that have lost the lower leaves look unsightly, and should be placed lower in the pots. This will improve the appearance and health of the specimens. If the roots are plentiful above the line of the pots, the plants may be safely cut off at a suitable length and potted in the usual way. Sometimes, however, owing to the plants being kept in a dry atmosphere, these aerial roots are very few. In such cases the stems must not be cut, but the entire plants placed in the pots with the lower end of the stem touching the bottom if needful. Fill with drainage to within a third from the top, and use more charcoal with the moss than for well-rooted plants.

ORCHIDS IN PITS AND FRAMES.

From the beginning of the present month until the middle of October pits and frames may be turned to good account by Orchid growers. Anyone desirous of growing *Odontoglossums* and other cool Orchids, and yet not having the convenience of a suitable house, may do so successfully if an ordinary frame is at command. During the winter and early spring these plants are easily managed in an ordinary greenhouse, but in the summer it is impossible to maintain the requisite amount of atmospheric moisture. The usual occupants of such structures would also have to be unduly shaded. Before using thoroughly cleanse the frames and lights inside and out by scrubbing with soap and water and a little petroleum. Afterwards rinse with clear water. Put the frames on a bed of coal ashes at the foot of a north wall, and sprinkle a little soot and lime on the ashes.

The plants must be kept as near the glass as possible by standing them on inverted pots. Very little shading will be needed at first, but the lights should be covered at night. When all danger of frost is passed place a brick under each corner of the frames, an abundance of air being thereby insured night and day. If mice are likely to be troublesome strips of perforated zinc should be placed around the lower edges and slightly sunk into the ground. Through the summer it is impossible to keep *Disas*, *Odontoglossums*, *Masdevallias*, and the allied genus *Restrepias* too cool. Shade heavily during this period, damp the floor freely on hot days, and lightly syringe the foliage morning and evening. Keep the roots moist, and the plants will soon show by their appearance that this treatment suits them. Remove the bricks, and let the frame rest on the ground at the end of August, as the nights are usually very cold in September, although there may be no actual frost. Early in October the plants may be taken from the frames and placed in their winter quarters.

Pits heated by hot-water pipes are useful for growing *Calanthes*, *Cypripedium insigne*, and other winter-flowering Orchids in, and the finest *Thunias* I have ever seen were grown in a disused Pine pit. Though this may not be considered the best of positions for these Orchids, yet the fact is suggestive of what may be done in pits of this description.

Dendrobiums, dwarf *Laelias* of the *majalis* and similar types, and others are greatly benefited by full exposure to sun and air after their growth is completed; and unheated brick pits with a south aspect form the best of accommodation for these. During boisterous weather the lights may be put on, and no harm can befall the plants, whereas without protection of this kind much damage may be done by high winds and the heavy autumnal rains.—H. R. RICHARDS.

NOTES IN GUERNSEY.

WE have read of the very severe frosts experienced in Ireland, Isle of Wight, and other places during the past winter, but one was scarcely prepared to witness the havoc which the frost has occasioned in the much warmer climate of Guernsey, and a few notes may be acceptable to your readers. In an island where *Camellias* grow to 10 or 20 feet, and form vigorous bushes like

our Portugal Laurels, where *Azalea indica* forms the foreground of shrubberies, we were surprised to find the noble examples of *Eucalyptus globulus*, some of which girthed 4 to 4½ feet, completely killed in both the sheltered and exposed aspects, and still more so to find the giant *Cordylines*, evidence of twenty to thirty years of mild winters, killed outright, and their bare brown and branched stems, standing out like some of the Cacti of South America. The great variety of Mediterranean or sub-tropical plants and trees grown gave to mind curious results in hardiness, and in order to save space we will take them in order.

The evergreen tree of Guernsey is the Evergreen Oak, which in sheltered places form trees of timber size. These are only injured where the salt spray has browned them. In deciduous trees some are crippled, but none killed, except by the force of the spray, as on the harbour at St. Peter Port, where the Plane is almost killed. The Guernsey Elm is the native tree, and forms very pretty avenues all over the island. The Turkey Oak does well, English Oak grows very stunted. Sycamore does well in the valleys, but there are no large examples; in fact, all timber is small. The Elms in St. Julien's Avenue form a pleasant arcade, and will make grand trees in time, as their stems are about 15 feet without a branch. The kind was not known to the writer, and the trees are probably continental.

The Conifers are few in private gardens. *Pinus insignis* and *P. austriaca* succeed, but the *Abies* are not in evidence, though the choicer *Piceas* may be seen here and there. *Thuja*s do not succeed, though in one garden *Thuja Lobbi* and *Cupressus nutkaensis* were very fine. *Araucarias* are seen in many places; trees apparently of twenty-five years of age. *Cedars atlantica* in sheltered spots; but *Cupressus macrocarpa* appears to have been quite killed. The feature of the villa gardens lies more in the evergreen shrubs, among which the various *Euonymus* are conspicuous; the *latifolia marginata* and *aurea marginata* being very bright, while the so-called *flavescens* was very gay in the hedges.

Rhododendrons find a congenial soil and climate, and in the Rohais Nursery *R. Aucklandi* and other Himalayan species thrive well. *Phormium tenax* is killed generally, but the variegated form has survived. The Loquat forms a noble bush, and *Magnolia grandiflora* makes a grand tree of 10 to 30 feet. The spring-flowering kinds make large shrubs, but were off flower at the time of our visit. The following species were killed outright—viz., *Cordylina indivisa*, Sweet Bay, *Eucalyptus*, *Cupressus macrocarpa*. Very much injured:—*Jasmine* (white), Gorse on the hills, *Fuchsias*, *Tamarisk*, *Mandevilla suaveolens*, *Escallonia macrantha*, *Eurybia illicifolia*. The following were not injured:—*Chamærops excelsa* and *humilis*, American Aloe, Loquat, *Pittosporum*, *Camellia*, *Genista fragrans*, Bamboos, *Azalea indica alba* and named kinds, *Edwardsia*, *Choisya ternata*, *Eugenia Ugni* and *apiculata*, *Othelia japonica*, *Aralia Sieboldi*, and Pampas Grass.

The Bamboos flourish in shelter, and grand masses of *B. metake*, *Henonis*, and *Vinatis glaucescens*, the latter the most graceful and making 20 feet shoots in a year, proving them to be of the greatest service in a suitable climate. *Arundo Donax* was not seen.

At the end of April the wild flowers most in evidence were the Thrift, Primrose, and Bluebell, and on the volcanic rocks fine masses of *Silene inflata*. The other wildings were the same as found in Britain at this season. We noted a very charming *Scabious* on the rocks, about 7 inches tall, of a bright slate blue, which we have not before gathered, about the colour of the *Ageratum*. In Ferns no uncommon species were seen, *Asplenium marinum* in rocky fissures well out of reach. The rarest plant found was *Genista scoparia prostrata*, which was recognised as the new plant of twenty years ago, several patches grew on one grassy promontory; a large flowered canary yellow Hawkweed (or Mouse-ear) was very beautiful on the rock sides.

The aspect of the island from a picturesque view is completely marred by the enormous increase of "glass houses" for the culture of early vegetables, Tomatoes, and Grapes; and the fishermen say that it has frightened the sea birds away from the island who formerly visited Guernsey in their annual migrations. It is, however, very much to the credit of the farmers and small cultivators that they have developed this industry to such a degree. As many as 30,000 packages are sent to Southampton in one day in the season; and at this time Figs, Grapes, Tomatoes, Peas, French Beans and salads are daily sent off in the well-known packages one sees so frequently in Covent Garden. The small produce is consigned to the large midland and northern markets.

The trade in cut Daffodils is very large, and we saw large breadths of the better kinds in great vigour. All but *Poeticus*, *P. plenus*, and *biflorus* had now passed; but the healthy, vigorous "grass" told the tale of good culture. New glass houses are springing up on all sides, and every farm holding and nearly every better class cottage has some glass; while there are several companies who have enormous clusters of very long houses.

As most of the farms are freehold, the owners feel safe in erecting these costly structures, even on holdings of 3 to 10 acres. Hot-water pipes are now introduced largely to forward the produce, and windmills, on the American style, are visible on all sides to provide the necessary water. It evidently pays, because all the family help work, and to those cognisant of the stunted and ill-fed lower classes in our cities and towns, it is quite refreshing to see such clean healthy children, and an absence of "cheek" and rowdyism among the workers. One may learn how to make the most of things by a trip to this interesting island. In a future paper we may give our impressions of the fruit culture and the bulb farms, as well as the fauna which came under our notice.—VISITOR.

FLORAL FACTS AND FANCIES.

"IN this prosaic, matter-of-fact age," said I to an editor one day, by way of preface to a remark. "Prosaic, indeed!" he answered, interrupting me. "You wouldn't think so if you saw the quantity of poetry that goes into my waste-paper basket." No doubt there are plenty of rhymesters who bother editors with matter having neither poetry nor sense; but it is generally admitted by authorities that poetry has less influence upon the world than formerly it had, and that the culture of the imagination is often neglected through the pressure of other pursuits. There is one place at least where poetry might be supposed still to linger, even if banished from the busy haunts of men, and that is amongst the parterres and leafy bowers of the flower garden. But I asked a gardener whether he found his work conducive to the exercise of imagination, and he said that the heats and chills he underwent took all the poetry out of him!

Doubtless practical folks will regard many of the fancies which find a home in the flower garden as foolish; mere superstitions of a darker age. To the gardeners who lived in Greece or Italy during classic times trees and flowers were suggestive of the unseen, most of them belonged to some guardian deity, and several told the tragic story of some person, ærial or human, who had been transferred from sentient to vegetable life, yet retaining traces of his or her former history. Even long after, and in our own land, the garden seemed to the imaginative to be peopled with spirits—fairies lurked in the bells of its flowers or hid within the folds of leaves, while imps flung blossoms and seed-pods hither and thither for amusement. We have advanced beyond this, but we cannot ignore the fact that numerous flowers have a history which will for ever link them to persons and events, real not mythical; also the meanings which have been attached to others, if often of doubtful origin, are illustrative of human thought or emotion, and show sometimes an evident appropriateness.

We cannot, perhaps, take a better example of a plant group rich in memories than the Lily tribe, a name that even by botanists is applied rather vaguely, and, in common speech, it is made to embrace a great variety of species—Daffodils, Irises, Hyacinths, Narcissuses, Tulips even, and many others beside the Lilies proper. Quite distinct, though bearing this name, are those Water Lilies that carry us far back in our earth's history, for one species of the Lotus is associated with its oldest civilised country, the land of Egypt. Unquestionably it is difficult to identify the Sacred Lotus, consecrated to Isis and Osiris, revered, if not worshipped, by the Egyptians, honoured, too, in India, where images of Buddha are seen to grasp this plant, an emblem of life and growth, also of the sun arising from the ocean. Probably this is the *Nymphæa Lotus*, which expands its leaves and showy blossoms above the surface of the Nile. The Easterns compare a man who resists temptation to a Lotus leaf, because water will not rest on its epidermis. In floral language this Lotus represents "eloquence," which is singular. Another Lotus offers more of a puzzle, that wonderful species which supplied food to the Lotophagi. References to it show that it grew both in India and Egypt, also that it was a beautiful plant, the evidence rather favours the *Nelumbium speciosum*. Wanderers to the lands where it abounded gave themselves up (so the fable tells) to the pleasure of eating its fruit, losing all cares, and hopes too, in the dreamy, very deceptive languor the Lotus produced. It has been thought that the ornamentation in Solomon's temple (1 Kings vii., 22) was not copied from any Lily, but from the Egyptian Lotus, since excavations about Susa brought to light columns upon which wreaths were carved, composed of buds and expanded flowers of this plant placed alternately. Mrs. Hemans seems to have been much impressed with the fact that the Lotus maintains its calm equilibrium spite of wind and wave—

"Love is most like thee,
The love of woman, quivering to the blast,
Through every nerve, yet rooted deep and fast
Midst life's dark sea."

Our native species, *N. alba*, which has been sometimes introduced into gardens as an ornament of ponds and small lakes, is a symbol of "purity," and, according to some authors, so is the true Lily; but others say this is an emblem of "majesty," because during the spring its tall stem with its white blossoms rises above most plants growing near. Not inappropriately the yellow Lily represents "gaiety," and the pearly flowers of the Lily of the Valley tell of the "return of happiness," that is, they symbolise hope. The Lily of France has become an historic phrase, though in fact the *Fleur-de-lis*, or, properly, *Fleur-de-Louis*, is not a Lily; it was some Iris, chosen as an emblem by Louis VII. when he started to take part in the Crusades, and which retained his name. Very likely he plucked the common yellow Iris, or Water Flag, which grows upon marshes and along the brooks in his native land. It is a species that the French also regarded as an emblem of "flame," but it has been asserted the honour belongs to the garden Iris of purple hue, which flower is said to be suggestive of a "message." Doubtless, in the days of the Crusades, when steam and electricity were unknown, those whom the gallant warriors had left behind might sometimes watch the Iris expanding its flowers, and regard this as a sign that good news was approaching from the Eastern battlefields. The name given to this group of plants, derived from Iris, the messenger of the gods, represented by the rainbow, tells us of their bright and diverse colours. From this name, however, one author argues that all the Irises should be considered as types of variability or inconstancy, for what is more changeable than the rainbow?

Hyacinths, flowers that are now so cheapened that they have become favourites with all classes, remind us of the story about Hyacinthus, the youth Apollo was said to have killed by accident when playing at quoits. Unable to bring his beloved friend to life, the distressed deity caused this beautiful flower to spring from his blood, so henceforth the Oriental Hyacinth became a symbol of sorrow. One variety had upon its leaves certain marks, which fancy supposed to represent the Greek word *ai*, an utterance of grief. Hence the somewhat perplexing specific name of our woodland kind, the *H. non-scriptus*, because the leaves are un-inscribed, as indeed are others also. A special meaning has been attached to the white Hyacinth, which represents "shy loveliness." We come now to the allied Asphodels, not now particularly popular flowers, though some are handsome. The question is doubtful which is the true Asphodel of classic fame, probably *A. luteus*, with conspicuous yellow flowers, common along the plains of Italy and adjacent countries. According to several poets it is one of the flowers that adorn the celestial regions, the happy departed wander over "meads of Asphodel," and when tired repose in "Amaranthine bowers." But, in floral language, the plant is significant of the deep regrets that follow lost friends to the grave, and the reason of this is, that an ancient myth tells how Persephone was gathering flowers from a Sicilian field (where the Asphodel still blooms) and, with a stalk of it in her hand, was borne off by grim King Pluto to the regions of the dead. Hence the flower links the living and the departed, though it is seldom planted on graves now, as formerly it was. Old-fashioned gardens exhibit yet the Star of Bethlehem, flowering ere the leaves are expanded, its white clusters being regarded as an emblem of "purity," and starlike they are in that species (*Ornithogalum umbellatum*). Possibly it is the Drooping Star of Bethlehem (*O. nutans*), occasionally seen in gardens, and well worth cultivating, that one poet compares to a "pensive cloistered nun," and the tall *O. pyrenaicum*, with creamy smaller flowers on its spike might be regarded as one of the floral symbols of stateliness or dignity.

When exotic bulbs were rarities in English gardens, people grew species they found about the country, and the Colchicum or Meadow Saffron was introduced from the fields, its lilac vase-like flowers being admired in autumn, but its significance to the wayfarer who came upon it was not encouraging, for it meant "your better days are past," so 'tis said. Another favourite, which I seldom discover in modern gardens, was the Fritillary Lily, so called because the flower shows a curious arrangement of squares, thought to resemble the ancient dice box, or the chess board of later date. It also had the name of the Snake's-head Lily, from another comparison, and, by the doctrine of resemblances, was a plant good against venomous species of the serpent tribe.—J. R. S. C.

THE WARMINSTER POTATO TRIALS.

I AM quite ready to leave the difference of opinion as to the usefulness or otherwise of the Potato trials as mentioned in the very elaborate report on them I have criticised in your columns, to the judgment of your readers, most of whom are practical gardeners, and who fully understand at once the value of particular trials, and the practical lessons to be drawn from them or otherwise. Permit me to tell Mr.

Beaven that it was as a practical gardener simply, and in no respect as being occasionally engaged in County Council teaching, that I criticised his conclusions. Reference to my connection with the Surrey County horticultural instruction has nothing to do with the matter.

The Warminster report was sent me to express my opinions concerning it because it was well known that I had been intimately connected with Potato culture in all its varied aspects for over thirty years, and as such enjoyed a well known reputation in horticulture. It was as a Potato expert, if the term may be used without giving to so delicate a mind as Mr. Beaven's offence, that I sent my opinion on the report to the *Journal of Horticulture*, and no doubt it was for that reason that it was published. Very much of the ground covered in the trials not only I, but many others, had covered in days gone by. The reputation of that work may not have reached Warminster, but the recollection of it naturally caused me to feel that a good deal that had been done, no doubt most conscientiously for the benefit of the Wiltshire people, was like putting of wine into old bottles.

Mr. Beaven becomes angry because, having carried out his trials and published his report on them, anyone else should venture to view their worth differently from his. That is his misfortune. When he is as old as I am he will have learnt that the best of all tests of anyone's labour is found in the way it will withstand the fire of honest criticism, and where it fails then to accept the result in a generous way, and strive to repair what was imperfect or in fault. We old ones, who have been newspaper contributors so long, have found that even the *Journal of Horticulture* can present the appearance of a perfect hornet's nest sometimes should anything be written in its pages that excites others to differ and perhaps to irritability. We are well seasoned to all that; but then it takes years of contributions and contentions ere that happy faculty in human nature is reached.

If I did express strong doubt as to the correctness of some crop returns referred to in the report, I did so because they presented themselves to me as astoundingly abnormal, and beyond all experience. I have never seen a crop of five and one-third bushels per rod, even of the heaviest cropping Potato, lifted yet; and I have been unable to find anyone else who has. Still, if there has been no error in the weighing I will not longer doubt, but it remains to my mind as marvellous all the same. The position of an "if" in my criticism has nothing to do with practical results.—A. DEAN.



NATIONAL CHRYSANTHEMUM SOCIETY.

A MEETING of the General Committee of this Society was held on Monday evening last at Anderton's Hotel, Mr. R. Ballantine presiding. The chief item of interest in the proceedings was the report of the sub-Committee appointed to consider the necessity for revising the official catalogue, in which they recommended that a new supplement be issued to take the place of the supplemental list in the Centenary edition and the supplement issued in 1892. Mr. Gordon suggested that an entirely new issue prepared on similar lines to that of 1888 would be preferable, and that a Committee of thirty or thirty-six experts be chosen to send in returns. He was aware that this would involve a great deal of work, but thought it could be easily done by 1895, and would be of greater service than the supplement now proposed. Several other members gave expression to ideas connected with the work of revision, but in the end the report of the sub-Committee was adopted with the proviso that a more thorough revision of the entire work should be undertaken and published in 1896, when the Society would celebrate the fiftieth year of its existence as a Chrysanthemum society.

Seven new members and one Fellow were elected, and the Wisbech Chrysanthemum Society and the Newcastle-on-Tyne Society were admitted in affiliation. The annual outing of the members and friends of the Society is expected to take place one Monday in July, the date to be fixed definitely hereafter.

The Chairman reminded the members that on Monday next an interesting meeting was expected, at which Sir Edwin Saunders would take the chair, and the presentation of the address to Mr. E. C. Jukes will be made, besides which the promised discussion on Mr. C. E. Shea's paper on judging will be opened.

CODDLING CHRYSANTHEMUMS.

THAT the force of circumstances frequently leads us to adopt cultural practices which we do not at the time believe to be good ones, is a truism that most of us experience not once only, but many times in the course of our career. Sometimes the forced departures from orthodox methods of culture turn out as unsatisfactory as we anticipated, at others they show the way out of future difficulties, and lead to improved results.

During the last two years I have been gradually extending the practice of placing Chrysanthemums in the open air much earlier in the season than I had previously thought it safe to do, and I now begin to wonder how many hundreds of these plants are annually prevented retaining a dwarf sturdy habit of growth by being coddled in frames,

when they would be much better in the open air. Of course, some discretion must be used in the matter, as districts and positions vary so much, that the practice which would lead to success in one case would result in dismal failure in another. It is quite a common occurrence to find four or five degrees of frost registered in one part of the garden at a time when the thermometer has only fallen to the freezing point in another. A little close observation, however, will generally reveal some sheltered nook, which may be made good use of during the spring months for arranging Chrysanthemums and other plants in before it is safe to place them in a thoroughly exposed position.

Nearly all Chrysanthemum growers experience great difficulty in affording sufficient pit room to accommodate their plants, if arranged thinly, during the month of April; the consequence is that they are placed a little too closely together. This may only be for a couple of weeks, but it is long enough to alter the character of the plants considerably. For several years I have placed plants in the open air a good deal earlier than my neighbours seemed to think it safe to do, but I took the precaution to erect a rough framework around them and cover with thin canvas whenever there was an appearance of frost. This year, however, I have dispensed with covering altogether, and find the plants have not been injured in the least, although on several occasions the thermometer near them has registered 5° and 6° of frost. My opinion is that cold cutting winds do far more harm to Chrysanthemums when first placed in the open air than a few degrees of frost.

This year our first plants were stood in the open air during the first week in April. The treatment seemed to suit them so well that the same course was soon followed with the others that were established, and I have every reason to be satisfied with the result, as the plants are sturdy and strong, showing no trace of that weakness at the base of the stem and abrupt thickening of it higher up, a condition often met with among Chrysanthemums, although most growers try to avoid it.

In choosing a position in which to place the plants in the open air thus early in the season, it is important that it should be well sheltered

on the north and east sides. In our own case a bank of shrubs give ample shelter on the east side, and walls and buildings on the north and west. This circumstance doubtless accounts for the fact that a few degrees of frost have so little effect upon them.

When naturally sheltered positions are not available, they may easily be formed by thatching hurdles with straw, and with them enclosing a sufficient space to accommodate the requisite number of plants. If a walk is left up the centre and side ones arranged at intervals of 6 feet, the requirements of the plants are easily attended to, and in cases of severe frost cross-bars and canvas could be quickly fixed to afford protection.

This plan is, I think, a far better one than keeping the plants in pits, unless these are sufficiently numerous to afford ample room for each. I do not lose sight of the fact that during the last two seasons the spring months have been exceptionally fine, and therefore favourable to this outdoor treatment. The peculiarities of each season must, of course, be studied, but after making due allowance for these, I believe many will agree with me that we have gradually drifted into a system of "coddling" these popular flowers too much, and that any plan which tends to keep them strong and sturdy in their early stages of growth, not only improves their constitution, but also retards the formation of crown buds.—H. DUNKIN.

THE JAPANESE CHRYSANTHEMUM ELECTION.

As a supplement to the voters' lists of Japanese Chrysanthemums the concluding ones of which were given in our issue for February 8th last, we reproduce a table prepared by Mr. Molyneux of the varieties that were not included in Mr. Mawley's analysis, published in the *Journal of Horticulture* for November 30th, 1893, and January 25th, 1894. The number of votes accorded are the same as those given with the names of the varieties in the lists in our issue for January 25th (page 64), but the dates of introduction with the names of the respective raisers or introducers, also the colours, form an additional feature, which will doubtless interest many readers.

No. of votes.	Name.	Date of Introduction.	Raiser's or Introducers's Name.	Colour.
38	Mdlle. Thérèse Rey	1892	Calvat	Ivory white
29	Robert Owen	1892	Owen	Bright golden bronze, reddish bronze at the base
22	Golden Wedding	1893	Peter Henderson	Rich golden yellow
16	President Borel	1892	Calvat	Bright rose, golden reverse
15	Miss Dorothy Shea	1893	C. E. Shea	Rich terra cotta, buff reverse
13	Eda Prass	1892	American	Lilac, changing to blush
9	Waban	1891	American	Rose pink
7	W. H. Lincoln Improved	1893	Owen	Deep shining yellow
7	Princess May	1892	Agate	Pure white
7	Silver King	1893	C. E. Shea	Soft rosy mauve, silvery blush reverse
7	Mrs. E. D. Adams	1891	Pitcher & Manda	White, shaded pink
6	Viscountess Hambledon	1892	Owen	Silvery blush pink
5	Louise	1892	Calvat	Soft peach pink
5	Duke of York	1893	Dibbens	Deep pink, shaded silver
5	Golden Gate	1892	American	Tawny yellow
5	The Tribune	1893	Pitcher & Manda	Soft primrose
5	Beauty of Exmouth	1893	Godfrey	Ivory white
4	C. Shrimpton	1893	Seward	Crimson brown
4	Mrs. Beckett	1892	N. Davis	Blush white
4	Le Verseau	1890	Lacroix	Deep rose, shaded claret
3	Madame E. Rey	1892	Calvat	Deep lilac, suffused with rose
3	Primrose League	1893	American	Soft primrose yellow
2	Robert Flowerday	1892	American	Bright crimson lake, reverse silvery pink
2	Richard Dean	1894	Owen	Deep crimson, golden reverse
2	Madame C. Molin	1893	Calvat	Pure white
2	Violetta	1894	Kelly	Soft rosy violet
2	Elmer D. Smith	1891	American	Cardinal red, reverse chamois
2	Le Prince du Bois	1893	Gibson	Pale golden yellow
2	Colonel Chase	1894	Kelly	Pale blush, centre shaded yellow
2	Madame Octavie Mirbeau	1892	Crozy	White and rose, edged amaranth
1	International	1893	American	Salmon rose, shading to primrose
1	W. G. Newitt	1893	American	Pure white
1	L'Isere	1892	Calvat	Straw colour, changing to white
1	Mrs. P. Blair	1894	Owen	Silvery rose, streaked and shaded deeper
1	Wilfred Marshall	1894	Owen	Lemon yellow
1	Rose Wynne	1894	Owen	Delicate blush
1	Mrs. Bruce Findlay	1893	Owen	Deep blush pink
1	Cecil Wray	1894	Kelly	Canary yellow
1	Madame Cambon	1894	Gibson	An improved Comte de Germiny
1	W. K. Woodcock	1892	N. Davis	Deep crimson
1	Mrs. F. A. Spaulding	1889	American	Bright yellow, bronze shade near the base
1	Mrs. T. Denne	1893	American	Deep pink
1	Mr. E. G. Whittle	1894	H. J. Jones	Malmaison pink
1	Mr. G. Bryceson	1892	Jones	Rich amaranth purple, silver reverse
1	Mrs. A. Jacobs	1891	Newbould	Rosy fawn
1	Lizzie Cartledge	1889	American	Bright dark rose, silver reverse
1	Mrs. A. G. Hubbuck	1893	Jones	Deep carmine amaranth, silvery reverse
1	J. P. Kendall	1891	Owen	Silvery amaranth, reflexed rose cerise
1	M. Jules Toussaint	1890	Délaux	Dark red, reverse golden yellow



EVENTS OF THE WEEK.—The ensuing week will be a busy one amongst horticulturists. In addition to the Royal Horticultural Society's meeting, a southern Show of florists' Tulips will be held at the Drill Hall, James Street, Westminster, on the 8th inst. On Wednesday and Thursday, the 9th and 10th, the summer Exhibition at the Crystal Palace will take place, at which a fine display is anticipated. The annual festival dinner of the Royal Gardeners' Orphan Fund will be held in the Whitehall Rooms, Hôtel Métropole, on the 10th inst., the Lord Mayor of London presiding. As announced elsewhere in this issue, the International Exhibition at Antwerp opens on the 5th inst., as does that at Earl's Court.

— **THE WEATHER IN LONDON.**—Some very refreshing showers have fallen in the metropolitan area since publishing our last issue, and vegetation is making rapid progress. The nights, however, have been rather cold, north-westerly and easterly winds prevailing. Sunday was fine and mild, but Monday was showery. Tuesday proved fine but cloudy, and Wednesday opened with the prospect of a bright day.

— **HONOURS TO FRENCH HORTICULTURISTS.**—We understand that M. Lemoine, of Nancy, has been promoted to the honour of Officer, and M. Maurice de Vilmorin has been appointed Chevalier of the Legion of Honour.

— **NATIONAL TULIP SOCIETY.**—We are informed that the northern Tulip Show will be held at York on May 22nd, and the southern one at the Drill Hall, James Street, Westminster, on May 8th, in connection with the meeting of the Royal Horticultural Society.

— **WE** are requested to announce that "to his very great regret Sir Trevor Lawrence is unavoidably prevented giving the lecture on Orchids announced for the Royal Horticultural Society's meeting of May 8th, and in consequence of the shortness of the notice there may probably be no lecture on that afternoon."

— **THE BRUCE FINDLAY TESTIMONIAL.**—The sum raised in recognition of Mr. Findlay's long services in the cause of horticulture is being mainly devoted to the purchase of a service of plate, and the presentation will be made by the Very Rev. Dean Hole on the 11th inst. at 1 o'clock in the Council room at the Royal Botanical Gardens, Manchester.

— **THE ANTWERP EXHIBITION.**—This Exhibition, which is held under the patronage of H.M. the King of the Belgians, will be opened on May 5th, and close on November 12th. Many industries will be represented, and of the General Committee of the British Section, the Lord Mayor of London is President, with Sir Albert K. Rollit, LL.D., M.P., as Chairman. The last named gentleman is also Chairman of the Consultative Committee of this section, amongst whom are Sir Trevor Lawrence, Bart. (President of the Royal Horticultural Society) and Dr. Hogg, with many other representatives of British industries. The Exhibition will be located in the new quarter of the city near the River Scheldt, and will cover an area of about 200 acres. A series of shows of agricultural and horticultural products will be held under special regulations. On May 13th, 14th and 15th an exhibition of flowers, fruit and vegetables takes place, at which the following gentlemen have been requested to act on the Jury: Dr. Maxwell Masters, Dr. Hogg, Messrs. W. Bull, H. Cannell, Cutbush, R. P. Ker, J. Laing, G. Nicholson, J. O'Brien, W. Paul, T. Francis Rivers, R. A. Rolfe, F. Sander, Shuttleworth, C. Turner, H. Veitch, P. C. M. Veitch, H. Williams, J. Wright, and B. Wynne. At this show 171 classes are provided, these including plant novelties, Orchids, Aroids, general stove and greenhouse plants, as well as miscellaneous collections, for which valuable prizes, including gold and silver medals, are offered. On July 1st and 2nd an exhibition of Roses, bouquets and general cut flowers will take place, whilst on October 7th, 8th and 9th there will be a special show of fruit and plants. Intending exhibitors at the July exhibition must apply for space before June 10th, and for the October show prior to September 10th. Applications for particulars and schedules should be made to Mons. Alphonse de Cock, President of the Horticultural Section, 2, Rue Montigny, Antwerp.

— **THE AGE OF TULIP TREES.**—It is reported that there is a specimen of the Tulip Tree known to have been planted 200 years ago on Lord Homes' estate in Berwickshire. At 2 feet from the ground it measures 23 feet in circumference.

— **EARLY MUSHROOMS.**—A midland correspondent writes:—"Vegetation has made wonderful progress since the rains came, and the quantity of fruit blossom is enormous. Should the frosts keep off an abundant fruit crop is certain. As showing the mildness of the season, Mushrooms have been gathered during the week in the fields, some of which were of very large size."

— **EARL'S COURT INDUSTRIAL EXHIBITION.**—This Exhibition, which is to be representative of many of the manufacturing industries of Great Britain, with their latest artistic and scientific developments and improvements, will be opened on May 5th by the Lord Mayor of London. The gardens are being prepared, and with flowers, illuminations, and music are to be made a feature of attraction to visitors.

— **BOTANICAL LECTURES.**—On Friday next the botanical lectures for 1894 at the Royal Botanic Society's Gardens in Regent's Park, will be commenced by Mr. D. Morris, whose subject that afternoon and also on May 11th will be "Tropical Vegetation." On May 18th and 25th Professor F. W. Oliver discourses on "The Properties of Roots," and on June 1st and June 8th Professor S. H. Vines, F.R.S., will lecture on "The Circulation of Fluids in Plants."

— **AN AMERICAN HERBARIUM.**—The "Chemist and Druggist" says that the herbarium of the late Mr. Isaac C. Martindale of Philadelphia, comprising over 200,000 different plants and Ferns gathered from every country in the world, and valued at £2000, has been presented to the Philadelphia College of Pharmacy. The herbarium was bought from the heirs of the late proprietor by Mr. Howard B. French and Messrs. Smith, Kline, and French jointly, and given to the College by these gentlemen.

— **EPPING FOREST.**—The recent operations in Epping Forest have given rise to a large amount of correspondence in the daily papers, all the writers, with one or two exceptions, being opposed to the thinning of the timber and to the other improvements being effected by the Conservators. The Epping Forest Committee of the Corporation of London have so far met the public view of their proceedings as to promise that further operations shall be suspended till a select committee of experts have gone over the ground and reported upon the matter. Without prejudicing the decision of this Committee it may fairly be stated, says "Nature," that the newspaper correspondents have given a most exaggerated account of the number of trees felled.

— **THE ONION MAGGOT.**—I had hoped that an abler pen than mine would have added one more remedy to those recently advocated in the *Journal of Horticulture* for the exterminating of the enemy, but as it does not seem forthcoming from that source I make the attempt. Procure some gas water and mix at the rate of 1 gallon to 6 of rain water, applying with a small-rosed watering-can between the rows of plants. Take care that the mixture does not touch the plants, as in that case one might kill Onions and maggot. I saw the gas water first tried twenty years ago on a bed that looked a lost crop, but from the time the mixture was applied the Onions were masters of the situation, and converted what appeared a certain failure into success. There is one drawback—viz., the difficulty in getting gas water, but it will repay any little trouble taken to procure it. I hope some readers may give it a trial and report with what success at the end of the season; they will then I am sure, convey a lasting boon to their fellow men.—J. H. A. T.

— **THE FLOWERING OF STRAWBERRIES.**—In answer to an inquiry on the subject Mr. J. Smith of Mentmore states that "Royal Sovereign is rather earlier than Sir Joseph." Mr. Smith adds, "This seems a very remarkable season. Noble was in flower ten days ago in the open ground. I hope to gather ripe fruit in May: At present the following varieties are in bloom on a south border and in the open garden. Noble, James Veitch, Empress of India, La France, Gunton Park, Lord Suffield, Commander, Sensation, Scarlet Queen, Pauline, Vicomtesse Hericart de Thury, Auguste Nicaise, John Ruskin, Keen's Seedling, Grove End Scarlet, Dr. Hogg, British Queen, Royal Sovereign, Six J. Paxton, and La Grosse Sucrée. Not in bloom, but just showing (April 30th), A. F. Barron, Sir C. Napier, and President. Growing on an east border, not yet in bloom, Eleanor, Oxonian, Jubilee, Waterloo, Albert, Elton Pine, Latest of All, Alice Maud. I shall be glad to let you know the date of the ripening of any of these later on. Potatoes 1 foot high. Peas in bloom; sown in the open border in January."

— **EMBOTHRIUM COCCINEUM.**—Mr. S. Clarke, Trengwainton Gardens, Penzance, writes:—"I enclose you a few pieces of Embothrium coccineum to show how well this plant flowers in the open in West Cornwall." [We received blooms of this beautiful plant from Cornwall last summer, and an engraving of them appeared in the *Journal of Horticulture* for June 22nd, 1893.]

— **POLYGONUM SACHALIENSE AS A FODDER PLANT.**—A daily contemporary states that Lord Moreton is growing the Giant Knotweed (*Polygonum sachaliense*) with a view to test its utility as a fodder plant. As it grows vigorously on comparatively poor soils, and is not materially affected by drought, it is also being planted extensively in many parts of France, where it is stated the succulent shoots are much appreciated by cattle.

— **FRUIT PROSPECTS IN THE SOUTH.**—With the recurring showers vegetation of all descriptions has assumed its most luxurious aspect. It is averred by old cultivators in the district round and about Swanwick in the south of Hampshire that there will be a heavy crop of Plums; the trees are free from blight owing to the washing they have had. Pears and Apples, too, have set well, and the all-important Strawberry beds are looking grand, many flowers being fully expanded.

— **THE WAKEFIELD PAXTON SOCIETY.**—At the meeting of the Wakefield Paxton Society, held last Saturday evening, the Rev. F. D. Horner of Kirkby Lonsdale lectured on "The Florist Tulip: its Prospects and Diseases." It is almost needless to say that it was treated in a masterly style. The chair was occupied by Alderman Milnes, and Mr. Herbert Chapman was in the vice-chair. After the lecture a long discussion ensued, in which Messrs. George Gill, W. Mellor, Jesse Hardwick, W. Hudson, and others took part. The large audience accorded a very hearty vote of thanks to Mr. Horner.

— **IRISH CORRESPONDENCE.**—Would you kindly allow me as a constant reader and occasional correspondent of the *Journal of Horticulture* for many years, to ask your intelligent correspondent "E. K., Dublin," who usually writes with much accuracy, grace, and felicity, to avoid in his Irish notes such expressions as "Paddy," "praties," and alleged colloquial phrases as "niver," calculated to bring Irishmen into contempt, and which do not adorn gardening literature, and that I have never heard in Dublin, though a resident for years there. I am sure "E. K." would not willingly hurt any of our countrymen.—W. J. MURPHY, *Clonmel*.

— **THE VANITY OF SPARROWS.**—"Suburban" writes:—"Some months ago you recorded in the *Journal of Horticulture* an amusing so-called incident of the 'cuteness of sparrows in America. As a parallel to that story the following which has been going the rounds of the press may be printed for what it is worth." "A correspondent says his daughter writes to him from Bangalore that she is 'obliged to cover up her looking-glass with a towel, for the sparrows come in, sit on the frame, and tap at themselves, making both glass and dressing-table in a horrid mess. At first, the towel kept them away; but they were always on the watch, and if anyone removed the towel they would be there in a minute. But now they hold back the towel with one claw, hold themselves on with the other, and peck away at their images.'" Oh! those sparrows!

— **TOADS AND WOODLICE.**—Mr. J. S. Upex, Wiggantherpe, York, writes:—"I do not know if there are many gardeners who make use of toads, but they might do so to their advantage, for they are very useful in helping to reduce the number of woodlice, ants, beetles, and even worms in glass houses and frames. I have found them most useful where woodlice are numerous, as a great deal of harm is done to the young stems of Cucumber and Melon plants, also to the fruit where the plants are grown in frames, by their eating holes in the stems and on the under sides of the fruit. The woodlice are more numerous where the plants are grown on beds of manure, as this forms a good harbour for them, and some means must be used to get rid of them. There are several modes of trapping them, such as small flower pots containing a little moss, flat pieces of partly decayed wood, hollow stems, or pieces of haybands laid about the beds or where they congregate, all of which causes more or less trouble, but a toad introduced will soon reduce them, and is a very simple remedy. Toads may not altogether free a house or frame of woodlice, but I know from experience that they are a good help, for in one of my situations where Cucumbers and Melons were largely grown in frames, toads found about the garden were brought and put in the frames. Those who may not have tried this remedy are advised to give it a trial. They are also very useful in stoves, Orchid, or other plant houses where ants are troublesome."

— **THE PINE APPLE ABROAD.**—According to the statistics of the last year the Pine Apple ranks far above the Banana or the Fig, and not much below the Lemon in value as a domestic crop. More than 2000 acres are devoted to its cultivation in Florida, says an American contemporary, and the estimates of the new crop from that State are fixed at something like 50,000 crates. The value of the crop last year was something like £180,000, and almost an equal amount was imported from Cuba and the Bahamas. The supply is now continuous throughout the year, while a few years ago it was only known as a fresh fruit in a few seaboard cities during a few months.

— **THE LINDEN TREE.**—According to an American contemporary, the bark of the Linden tree plays a singularly important part in the domestic economy of the Russian peasant. It is made into a sort of matting, which is used for bags of all kinds, the best and heaviest being reserved to contain flour; and also into sandals, which are so universally worn that some 10,000,000 pairs are required each year. For sandal-making strips of the bark of saplings are employed, and, as it takes the bark of about four saplings to form a single pair, the destruction wrought by this one industry can easily be imagined. The young trees are stripped in the spring or early summer, when they are full of sap.

— **DAFFODILS.**—Out of several thousand bulbs of Daffodils, with two exceptions, I have had only a dozen flowers. The exceptions were on one clump in a shaded position, and another clump, the bulbs of which were lifted in July last for presentation. A number of them were exposed to the weather until September, and these flowered well—two blooms to each bulb. How is it that these bulbs flowered so freely after being exposed as they were to the sun so long? I am inclined to think that the wet season we experienced in the north early in the year had something to do with the majority of Daffodils not flowering. The excessive rains prevented other plants flowering.—W. T.

— **ARTIFICIAL EDELWEISS.**—It appears from an article in a recent issue of "Nature Notes" that the tourist in Switzerland who is anxious to take a piece of Edelweiss home with him is often imposed upon by a sham plant, for which he pays a good price, and is, therefore, saved the trouble of collecting or cultivating the real thing. The artificial blossom is made of the white woollen felt material of which the coats of the Austrian soldiers are made. When cut into strips this resembles the characteristic upper leaves of the plant, particularly when the colour is somewhat mellowed by exposure. These strips of cloth are carefully cut out and skilfully attached to a stock of any weed that comes handy and which has a superficial resemblance to the Edelweiss in habit. The specimen is then pressed and dried, and the pious fraud is complete.

— **WALLFLOWERS.**—I was much interested in seeing a very attractive show of common single Wallflowers growing in the Canbury Gardens at Kingston recently, because so quaintly intermixed. Possibly the whole were the product of a special mixture, or the plants may have been raised from small packets of diverse sorts or colours, but the effect was interesting and pleasing. There were, of course, numerous representatives of the popular market blood-red variety, the earliest and richest breed of all Wallflowers. Then there were some that had petals of the ancient bizarre, or mixed hues of red and yellow, in all sorts of markings. There were also the tall Golden Gem, a very attractive yellow; the dwarfer, stouter, and much deeper hued Bedfont Yellow, also some of the still dwarfer bright yellow Belvoir Yellow, a strain that needs hard selection to keep it true to character; and last there were plants, though fewer, of the new cream or pallid sulphur form called Primrose Dame. This is the most unsatisfactory one of all, because at present the hue is what may well be called sickly or washy. If it should eventually lead to the production of a good white variety, then all lovers of Wallflowers, and they are legion, will hail its appearance with satisfaction. I do not think we need despair of getting such a floral rarity, as I observe that on some plants the flowers are very pale and come near to what we call a French white. To save seed from such a mixture of sorts would be folly, indeed I have found few hardy flowers, the which, to preserve them true to form, need greater isolation from each other. A bed of yellows will demoralise the blood-reds, and the latter will do the same for the yellows. That very much more might be done to ensure perfect depth of colouration in the red strain there can be no doubt. Those who noticed the large market breadths this spring, all of which went off to bloom so early, may have seen perhaps a plant in every hundred of perfect self tints. These isolated from the rest would, of course, give a much truer blood-red stock.—A. D.

— THE TOTAL RAINFALL AT ABBOTS LEIGH, HAYWARDS HEATH, SUSSEX, for the past month was 2.54 inches, being 0.79 above the average. The heaviest fall was 0.82 inch, on the 24th. Rain fell on fifteen days. The maximum temperature in shade was 72°, on the 8th; the minimum 31°, on the 22nd; mean maximum, 60.11°; mean minimum, 41.19°; mean temperature, 50.65°, 3.66° above the average. Since the 24th rain has fallen daily, and in abundance; thunder and hailstorm on the 28th.—R. I.

— THE WEATHER DURING APRIL. — Mr. W. Mabbott, The Gardens, Gwernllwyn House, Dowlais, Glamorgan, writes: — "The following is a summary of the weather here for the past month:— Amount of sunshine, 115 hours 25 minutes. Number of days on which the sun shone, twenty-six; maximum, 11½ hours on the 2nd; minimum, 25 minutes on the 30th. Frost was registered on four days. Total rainfall, 3.65 inches; maximum, 0.55 on the 27th; minimum, 0.03 on the 6th. Rainfall, April, 1893, 0.26. Very bright dry weather was experienced at the beginning of the month, with cold east and west winds, but it has been very genial since the middle of the month."

— DOUBLE PRIMROSES. — Being a lover of many of our old-fashioned flowers I was interested in the remarks by "A. D." (page 281), as well as those by Mr. S. Arnott on page 299. I am more extravagant in my views than "A. D." as to a dozen being a good collection. That number of distinct shades may, however, be considered a representative collection in colour. I have about that number, consisting of three whites, three yellows, one lilac, one crimson, one double Polyanthus, two yellow Auriculas. I have a few choice single varieties, including *P. nivalis* and *P. cardinalis*, but have lost all my named Polyanthus, including a pretty double variety of my own raising, a scarlet, two crimsons, and many others of various shades. Recently Primulas have become popular, but in some cases the flowers are large, though coarse. I am watching with much interest some seedling Polyanthus of Messrs. Sutton & Sons' strain giving great promise of excellent flowers.—W. T.

— POISONING BY YEW LEAVES. — *Apropos* of the remarks that appeared recently in the *Journal of Horticulture* anent the poisoning nature of Yew leaves, the following case, which appeared in the Law Courts last week, may be of interest. *Ponting v. Noakes*. — This was an appeal by the defendant against a verdict and judgment, given in the County Court of Andover, in favour of the plaintiff for the value of a colt, £22, alleged to have been poisoned by eating defendant's Yew trees. The appeal was on the ground that there was no evidence that the colt had eaten of the defendant's Yew trees, and that if it had it was through no fault of the defendant. Mr. Justice Charles said the parties occupied adjoining fields, divided by a ditch and fence. On the defendant's land grew a Yew tree, the branches of which projected over the ditch, but they did not overhang the plaintiff's land. At a distance of 20 yards was another Yew tree on a Mr. Hunt's land, and 120 yards away yet another Yew tree. The colt was found dead within 5 yards of the defendant's Yew bush, and a post-mortem examination showed that the animal died from eating Yew leaves. The defendant's Yew tree and Mr. Hunt's showed signs of having been recently eaten. A veterinary surgeon, who gave evidence in the action, had known of a case in which a horse walked a mile after eating Yew leaves; but that was exceptional, and mostly the horse dropped down immediately after eating Yew leaves, or within a short distance. There was no evidence that the colt did eat the defendant's Yew leaves, but there was the evidence that the colt was found within 5 yards of the defendant's Yew bush, the other two Yew trees being respectively 20 and 120 yards away. But could it be said that there was any obligation on a man not to grow a poisonous tree so near his own boundary as to be accessible to the stock of his neighbours; or, if he did grow it, was he to take precautions against danger to his neighbour's stock? There was no liability on the part of the defendant to repair the fence, and he did not see how the defendant could be made responsible for the animal going on to his land. The colt received its injury through its intrusion. It had no right to be there, and the owner could not recover. Mr. Justice Collins concurred, and said that even though it had been proved that the colt had died from eating of the defendant's Yew bush, it was shown that the animal could not have reached it without going beyond the edge of the ditch, which was the boundary of the plaintiff's field; and it would be a strange thing if a man who wished to grow a Yew tree near his boundary must be under the obligation of varying the growth near his boundary to meet the varying use of his neighbour's adjoining land. The appeal was allowed with costs, and leave for further appeal was granted, if notice be given within seven days.

— TWO GRAND TULIPS—DUKE OF YORK AND PRINCESS ALEXANDRA.—Mr. G. Clements of Haseley Manor Gardens, recently drew my attention to these fine double varieties which he is growing this season. The flowers are of great size and substance, and the markings especially clear and good. The first named is a deep rose edged with white, quite a novel and attractive flower, which ought to be included in every collection. The latter variety has a crimson ground and an edging of a very bright golden yellow. Both are strong growers of easy culture, and will, I am sure, be much sought after in the future. If the improvement in Tulips, which is now rapidly taking place, continues at a similar rate during the next few years a Tulip fever, if not another Tulip mania, will assuredly sweep over the land.—H. D.

— NARCISSUS SIR WATKIN.—This grand addition to an already delightful class of spring flowers will, I predict, in time be one of the most largely grown. The combination of primrose and golden yellow shades of colour, so well blended in the flowers, produce a beauty which close inspection alone reveals, although the blooms are large and imposing. The variety is a strong grower, having unusually stout leaves, which are self-supporting unless hard forcing is resorted to. I find the plants do splendidly when brought on gradually in an airy pit where a little heat is kept in the hot-water pipes during dull weather. With this treatment they may be had in flower early in February. Pots containing half a dozen bulbs make such a fine show when placed singly in vases that I think it a mistake to subject them to hard forcing, and thus spoil the naturally stout texture of the leaves. One thing in connection with Sir Watkin I am sure all growers would hail with delight, viz., a considerable reduction in the price. That alone is required to ensure for it a largely increased demand.—H. DUNKIN.

— BEDDING PLANTS AT HAMPTON COURT.—The general public who visit the gardens and Palace at Hampton Court, and are so delighted with the beautiful masses of flowers found in the beds and borders in the summer, have no knowledge whatever of the labour involved in the production of all the thousands of plants needed for the creation of this fine show, yet close at hand, but in a secluded place, may be seen a large group of glass houses and frames, which are just now literally crowded with plants in many forms, and which it has been the work of the experienced staff to propagate and grow during the winter and spring. What myriads of Fuchsias, Zonal and Ivy-leaved Pelargoniums, Begonias, Violas, Lobelias, Petunias, Verbenas, foliage plants and carpet plants in vast numbers, and many things that cannot be named, but will be seen in profusion in the beds during the summer. It is certain that no effort is being spared to produce the material, and it may be assured that the able staff of the gardens will employ it in the most attractive way.—D.

— MICROBES IN THE SOIL.—That it is easy to find microbes in the soil capable of assimilating atmospheric nitrogen, if culture media devoid of all combined nitrogen are employed, was pointed out by M. Winogradsky last summer, and in a recent number of the "Comptes Rendus" an account is given of important progress made by him in this most interesting subject. By progressive cultivation of a mixture of microbes derived from soil, in a nutritive liquid from which all traces of combined nitrogen were carefully excluded, Winogradsky reduced the varieties present to three bacilli, of which one was finally separated out and discovered to be endowed with this function of assimilating atmospheric nitrogen. This organism, we learn from "Nature," is strictly anaërobic, and will not grow in either broth or gelatine. It ferments glucose, producing butyric, acetic, and carbonic acid, and hydrogen. The amount of atmospheric nitrogen assimilated is proportional to the quantity of glucose contained in the culture material, and which undergoes decomposition in the presence of this bacillus. Winogradsky concludes his paper by suggesting that this phenomenon of the fixation of atmospheric nitrogen may be due to the union within the living protoplasm of the microbial cell, of atmospheric nitrogen and nascent hydrogen, resulting in the synthesis of ammonia.

— OAK v. ASH SINCE THE BATTLE OF WATERLOO.—Mr. J. Roger Dutton, Reading, writes as follows in reference to the controversy regarding the Oak v. Ash which has been going on the daily press:—"Now that the Oak and Ash are both out (although it will be fully ten days before an Ash attains that stage), we have the record of another spring to add to bygone years, and I think I am in a position to answer the various points mooted during the past few weeks with reference to "Oak and Ash." I have before me a record as to both of these trees (applicable to several counties) for seventy-nine years—i.e., since the Battle of Waterloo, the first fifty-six obtained from one who "faithfully annotated" during that time, the last twenty-three carefully entered

each year by myself. From this it appears that since the Battle of Waterloo the Ash has been out before the Oak only twelve times, and that 1859, or thirty-five years ago, was the last occasion. As I can confidently assert the Oak has had priority ever since I kept a record, I am almost rash enough to question even the twelve years referred to, and

extensive drainage and culture of the last sixty years have had some effect in retarding the Ash or advancing the Oak? As the Oak has undoubtedly been out first for at least thirty-five years, and we have had seasons of "soak," as well as of "splash" only, I contend the old adage is now valueless."



FIG. 56.—THUNBERGIA HARRISI.

for this reason. Some days ago I saw my first Ash in leaf. In the same hedgerow were two Oaks not yet out, and I have not the slightest doubt a casual observer of these would confidently assert 'in 1894 the Ash was out before the Oak,' whereas the fact is the Oak was out ten days previously, as on April 14th I wore in my hat a sprig with leaves fully expanded, taken by myself from a full grown Oak. This is the earliest year for the Oak, and the earliest but one for the Ash in my record. We forget there are early and late Oaks and Ashes, as there are early and late Potatoes; and though it is possible occasionally, but very seldom, to find an early Ash out before a late Oak, I contend in that same year there has been an early Oak out before the earliest Ash. If, however, in our forefathers' time it was not uncommon to see the Ash out before the Oak (and the old adage seems to assure us of this), may not the

THUNBERGIA HARRISI.

FLOWERS of this beautiful climbing plant were exhibited by Mr. Wilkins, gardener to Lady Theodore Guest, Inwood House, Henstridge, near Blandford, at the meeting of Royal Horticultural Society on the 24th ult., and they were much admired. *Thunbergia harrisi* is by no means a new species, having been introduced nearly forty years ago, but it is not generally cultivated. The blooms are large and showy, being purplish blue with a pale yellow suffusion in the throat. They are freely produced in racemes, which should be sufficient to warrant at least one plant of this species a place in every stove. A first-class certificate was awarded for the specimens staged at the above-mentioned meeting, and from these the engraving (fig. 56) has been prepared.



PROSPECTS OF ROSE EXHIBITORS IN 1894.

IN reference to my recent remarks on the season and the editorial note thereon, to which I can take no exception, as it is perfectly correct as far as it goes, I would like to supplement what I said on page 316 with some further comment. I note that a well-known writer in one of your contemporaries, who rejoices in possessing pseudonyms when writing in that Journal alone, takes the same view as I do this year, whereas *last* year he took the peculiar view that the season was a late one! By the way, why does anyone use pseudonyms which are clearly seen through? Calling oneself "Violet" in one paper, "Dahlia" in another, "A Resident by the Seaside" in a third, and by a cabalistic letter in a fourth, seems to me a very unnecessary proceeding. Surely there is no iniquity in writing on garden topics? I see that the growth of Roses, progressing as it does now, must end in our flowering season being at end of May or beginning of June, unless there be a very marked change shortly to cold weather. The difference between this year and last is simply in the fact that we now are having warm rain, which is stimulating, invigorating and refreshing, whereas last year we had perpetual sun, which forced everything ahead without the advantage of occasional showers to cool and otherwise benefit the plants in our gardens.

In your editorial note you call attention to the fact that the professional northern exhibitors in the years 1888 to 1893 were able on only two occasions to win the nurserymen's trophy. I am sorry that having instituted this comparison you did not go back one year further, to 1887, and compare seven years, a fairer period than six, as when a series of years is taken a septenate or decade is more usual for comparison. In 1887, 1889 and 1893 the nurserymen's trophy was taken by the same firm, Messrs. Harkness of Bedale, who must therefore and thereby be considered the champion exhibitors of the nurserymen north of the Tweed; in 1888, 1890, 1891 and 1892 the trophy was won by Mr. Frank Cant thrice, and by Mr. B. R. Cant once, the latter gentleman having won it on five previous occasions since its institution in 1881. By making the comparison as I now call attention to it a much better estimate of the chances of north and south is given—by it the fact is made more apparent that in hot seasons like 1887, 1889 and 1893 (and probably as in 1894), Messrs. Harkness, the northern champions, are able to defeat the combined efforts of the great southern professionals. The comparison does not work out quite in the same way with our amateurs, as for four years in succession, and I hope he may prove it so in the present year, our greatest amateur rosarian has proved himself invincible, be the season cool or warm. Prior to Mr. Lindsell taking this position the west country amateurs seemed invincible for a time. But the question is one of far more importance to the National Rose Society than that of the championship, as it means, as a rule, that with a late *date*, or any ordinary date in hot seasons, there is usually a bad Metropolitan show of Roses, whereas in a late or medium *season* there is a good show at the Crystal Palace. I need not go further back than 1892 and 1893 to exemplify this, but the same statement holds good of previous years.

This question of early and late dates is one that I thrashed out fully in the columns of two of your contemporaries during the winter of 1892, and what I then contended—that an early season or a late date for the Crystal Palace Show meant disaster to the interests of the N.R.S., except in the saving of prize money from the want of competition—turned out, unfortunately, too true last year, and even at the risk of being looked on as a prophet of evil, I see it is almost inevitable that this year will be a repetition of 1893. If we were but energetic, or really had our hearts bound up in the interest of the Society, instead of saying we were deeply attached to it and to all the best interests of rosarians, we should already be on the alert and seeking some way of averting the trouble ahead. Such of us as do not believe in late dates for our Crystal Palace meetings, and I proved by a vote last autumn of over 100 exhibitors that the large majority of our Society is opposed to them, should have opposed the Crystal Palace fixture of July 7th. We negligently allowed the late-daters to carry their day, and I take for granted that piece of mischief is irremediable; but can we not, with another show fixed for Windsor on June 27th, so re-arrange matters that the Windsor Show may, in part, make amends? No doubt we could; but I know what the answer will be, "We cannot!"

ROSES AT THE R.H.S.

The R.H.S. second April meeting was, in my opinion, the best which the Society has ever held at the Drill Hall, and, wonderful to relate, the attendance, although on a wet afternoon, was commensurate with the importance of the display of flowers sent by amateurs as well as professional growers. The principal event of the fixture was nominally the annual Auricula Show, but this seemed in reality quite secondary in importance to the splendid display of other plants and flowers sent by the greatest of our professional growers. If I were to name the exhibitors I should send a list of those most famous in horticulture in the neighbourhood of London. Roses were shown in profusion, and arranged

with great taste. When everything was above the average it may seem almost invidious to distinguish, but the pot Roses of Mr. George Paul and Mr. Turner, and the cut flowers of Mr. Frank Cant and Mr. Walker of Thame, Oxon, were remarkable for their superiority. Mr. Walker had four boxes of Maréchal Niel, and it may be truly said that hardly one Rose in this fine exhibit of eight dozen flowers was of inferior quality, while many amongst them were of the highest excellence. Of Mr. Frank Cant's exhibit I can say that they were able to stand comparison with his beautiful Roses of the 10th April, which I mentioned in my note in your issue of the 19th inst. (page 305). On the present occasion the majority of Mr. Frank Cant's flowers were H.P. varieties, those of the most remarkable form being Mrs. John Laing, Madame Montet, Violette Bouyer, Thomas Mills, and Baroness Rothschild. He, however, also had exceptionally good flowers of La Boule d'Or, Catherine Mermet, The Bride, and Comtesse de Nadaillac; The Bride, perhaps, being the finest flower in an exhibit of the highest general excellence.

Mr. George Paul had a most interesting, large, and beautiful collection of Roses in pots. Amongst these the palm may be given to a plant of La France, shown to perfection, and we who are rosarians all know what a perfect plant of La France is; but it is exceptional when it bears some twelve really fine specimens of its sweet flowers in full bloom at the same time. Mr. Paul's exhibit had other good plants, notably Margaret Dickson and Marchioness of Londonderry, the latter with only two flowers in bloom, but one almost if not quite a medal Rose. I truly hope we may be able to grow this Rose well in the open, its size and massive form being above the average of most Roses, and I should say it is certainly the largest white Rose now in cultivation. Other good Roses shown in this exhibit were Madame de Watteville, Innocente Pirola, and Souvenir d'un Ami, all well grown and covered with fine flowers. Messrs. Turner of Slough showed their Rose Crimson Rambler and Souvenir de S. A. Prince in a most taking way, and their flowers were fresh and good.

The other exhibitors of Roses growing in pots, which made a fine combined display, covering over one length of the Drill Hall, were Messrs. Wm. Paul & Son (who also sent boxes of cut flowers), Mr. Rumsey of Joynings Cross, and Mr. Tasker of Middleton Hall, Brentwood. Mr. Wm. Paul showed two Roses of his own raising, Princess May and Corinna, two very sweet varieties. I hope that the latter may become a favourite exhibition variety, as its colouring is distinct. We cannot have too many good Teas, and our British hybridisers deserve encouragement in their efforts.—CHAS. J. GRAHAME.

STRAWBERRY GROWING FOR PROFIT.

IN some districts Strawberries are considered the most remunerative crop of all hardy fruit. In making new plantations a comparatively small outlay is necessary, inasmuch as well rooted runners of the best varieties for this purpose can be purchased for a modest sum. It cannot be said that the Strawberry is at all fastidious as to soil. As far as I know there is but one class of soil in which Strawberry culture does not pay—namely, where the surface is impregnated with chalk. Where the roots come in direct contact with chalk the foliage quickly assumes a paleness of colouring which betokens a short existence and with it a moderate crop of fruit. Perhaps the best of all soil for this fruit is loam of medium character overlaying gravel or clay. In peaty soils, or even sand and shingle, so much of the latter that it is difficult to see aught else after the ground has been undisturbed on the surface for a few months, Strawberries flourish. It is indeed surprising how under such conditions the plants grow at all, to say nothing of the heavy crops of fruit they bear in some districts.

While some growers allow their plants to occupy the same site but three years, others do not disturb them for double that period, and the plants continue to give satisfactory crops. In a garden not far from where I write some plants have occupied the same site for twelve years, and as yet there is no attempt to replace them. Circumstances in regard to this matter have to be taken into consideration and acted upon accordingly; by the third season, however, the plants should arrive at perfection.

Preparing the land is an important matter in Strawberry cultivation. In the case of heavy loam upon clay, the soil should be trenched at least 18 inches deep to provide perfect natural drainage. It is important that the top soil should be kept on the surface. Where the land is at all dirty with weeds, it is a good plan to take off it first a crop of Potatoes. This is perhaps the best method of cleaning land and still have a crop upon it. In the case of soil that has been impoverished, some cultivators manure as many as three times for the Potato crop. They give the land a dressing in the autumn, another at planting time and a stimulant when the Potatoes are earthed up; the continual stirring of the soil by the aid of the plough or fork thoroughly cleanses it from weeds and gives it a good tilth. Land worked in this manner cannot fail to be in perfect condition by the time the Strawberries should be planted at the end of September. Some few persons plant in March, but they lose a year by the plan. If early well rooted runners are put out, choosing showery weather, they will produce sufficient fruit the following season to pay for the labour incurred in cleaning them, and be in a condition to give a full crop the year after.

The varieties grown vary somewhat in different districts; as a rule, though, Sir Joseph Paxton is an excellent market Strawberry. This sort possesses all that is required to make Strawberries profitable; its constitution is undoubted, as are its cropping qualities and firmness of

fruit—an important point. Some marketmen grow a limited number of others, such as Noble, Eleanor, or Alice Maud, in hopes of their ripening a few days in advance of the old favourite, but as a main crop variety Sir J. Paxton is the one to depend upon.

The manner of planting varies according to the soil and the amount of leafage made. In some districts a space of 3 feet 6 inches is allowed between the rows, and quite a yard from plant to plant. Some growers, on the other hand, have the rows 2 feet 2 inches asunder, allowing but 16 inches between the plants; they allow a few runners to remain, and in three years the rows are in a mass from end to end. Let no one assume, however, that the plants are so thick that they crowd each other unduly; the market man fully understands the risk he would run in allowing this to take place, but he also knows how to make the most of his land. From these remarks the beginner in Strawberry growing will at once see there can be no hard and fast line to follow as regards the distance to plant.

What is known as "bedding" the plants is an important detail in cultivation. Nothing is better than wheat straw for the purpose. It is laid between the rows neatly at the time the first blooms open, thus preventing the fruit being splashed with the soil by heavy rains. There is another advantage in putting it on thus early, that of conserving the moisture in the soil. To a gardener it is astonishing how the market man's Strawberry plants exist through such a season as last summer, and still bear the enormous crops of fruit. The market grower previous to "bedding" the plants keeps the surface well worked by the hoe, thus reducing to a minimum the opportunity for evaporation of moisture.

The treatment of the plants after they are relieved of their crops is another detail in Strawberry culture. The question of cutting off most of the leaves at the time of clearing away the runners is a debatable one amongst gardeners, and so is that of digging between the rows, but not so with the grower for market. One large cultivator of my acquaintance the year before last penned a flock of sheep on his Strawberry plants early in July, for the express purpose of clearing the plants of their leaves, runners, and what few weeds there were. No Strawberry plantation could look better, and the crop last summer was the best he had experienced, in spite of the extreme drought. Many persons, no doubt, will be apt to think that the crowns of the plants would be injured by the sheep nibbling them too hard; but not so, every leaf was ate, but the crowns remained intact. Apart from the utility of the plan in the saving of labour and also in providing "keep" for the sheep for a few days, a considerable amount of manure is added to the ground. The ordinary grower who does not utilise sheep for clearing his Strawberry quarters employs the fag-hook for the purpose of cutting off the surplus leaves.

All the growers that I am acquainted with fork between the rows, some of them work in a dressing of partly decayed manure. The only difference in the digging is the time when it is done. Where the land is inclined to be heavy the autumn is chosen for the work, the winter frost pulverises the soil, and renders it easy of management in the spring. In the case of light sandy soil the manuring and digging is postponed until the spring. Let no one suppose that the ground is dug deeply; the surface but a few inches deep is moved, sufficient to bury the manure and break the "crust."

Well-rooted runners are chosen for planting. Those usually found between the rows in the well-trodden ground are preferred to any that could be obtained by layering in pots. Most of the growers utilise the space between the rows the first year with a crop of some shallow-rooting vegetable—for instance, Onions for pulling green, or Lettuce. Although this intermediate crop renders the task of keeping down weeds more difficult, the outlay in labour is more than balanced by the crops obtained.—E. MOLYNEUX.

ROYAL HORTICULTURAL SOCIETY OF IRELAND.

THE recent spring Show of the Royal Horticultural Society of Ireland showed a gratifying advance over its predecessors of recent years, but the attendance was hardly so large as might have been expected. Could these exhibitions be kept open till a later hour, many persons might extend their patronage who are precluded by business from attending earlier in the day. The arrangements were admirably carried out by Mr. W. P. North, the courteous Secretary.

The Royal University, with its spacious carriage approach, is admirably adapted to the requirements of our first Exhibition of the season. The entrance hall and large concert hall, in which the exhibits were staged, were well filled, and the powers that be deserved some meed of praise for the perfectness of their arrangement, not only having a place for everything, but having everything in its place at the appointed hour for those "good men and true" who are to record their verdicts. Hamilton Drummond, Esq., the Hon. Secretary, and the Council of the Society were favoured by a visit from His Excellency the Lord Lieutenant. The fine group of plants from the Viceregal Gardens, amongst which was a grand *Medinilla*, brought back memories of the past when this Society was in the height of its glory, from which it slowly ebbed till some two years since a storm blew down its tents at the autumn Show and all but extinguished it. But friends rallied round the scattered debris, and have the gratification of seeing their efforts rewarded in the rebuilding, in which some changes have been effected to meet the new order of things. One thing, and one thing only, is now wanting, viz., appreciation of the public, and if they want anything more than is now provided, I fear the worthy Secretary must obtain it, even to fireworks.

The blue riband of this Exhibition was for the best stand of hardy flowers bloomed in the open, to consist of twenty-four bunches of not less than twelve varieties nor more than three of one genus. This prize (a 10-guinea cup) was taken by J. G. Nutting, Esq., Gortmore, Dundrum. Mr. Watt, gardener to Mrs. Pease, of Willow Park, was placed second. Third, Mrs. Lawrenson, who, under the *nom de plume* of "St. Brigid," is associated with that glorious strain of *Anemones*. *Hyacinths*, which are generally seen in fine condition here, were only represented by twelve plants from Mr. Stewart, and two entries in the class for nine, all of which were past their best. As with *Hyacinths* so with *Narcissus*; here amateurs were quite out of it. In the nursery-men's class, Messrs. Henderson were, with a stand in which the minor varieties showed most, deservedly awarded the Society's large silver medal. *Maréchal Niel* Roses were well represented, Captain Osborne's stand being an easy first. A few *Auriculas* were to be noticed, but fashion does not appear to favour them now. Some veteran gardeners, "heroes of a hundred fights," while looking at the few now staged, think of the past, shake their heads, and talk of "how fields were won" in days of yore. The premier honours for stands of *Roses*, *Tulips*, *Zonal Pelargoniums*, and *Pansies* were taken by J. P. Stewart, Esq., who usually takes the lion's share in these classes, and was also awarded first for *Roses* in pots, shown in fine form.

In the separate classes for nine foliage and flowering plants, six exotic Ferns, and six specimen *Azaleas*, Mr. G. L. Watson was placed first. Mr. Jameson's group of plants included a magnificent *Cycas revoluta*. *Cinerarias* filled a stage at one end of the concert hall, and were probably the finest yet staged in Dublin, Mrs. McCann took first with six excellent plants. *Deutzias*, a new feature here, were good, Mrs. Millar being first. At the end of the entrance hall Mr. Watson of the Clontarf Nurseries, had amongst a variety of plants a well flowered specimen of *Dendrobium thyrsiflorum*. Plants of *Genista scoparia* *Andreana* had also many admirers. Groups from Messrs. Ramsay of the Ball's Bridge Nurseries, and Messrs. Henderson of Templeogue, contributed more than their usual quota of interest to the Exhibition. Mr. Smith of Newry, whose name is par excellence coupled with hardy flowers, had one of his inimitable stands fixed in a corner of the orchestra. They have a magnetic influence over visitors, which even the close proximity of music in the form of a military band fails to dispel. Opposite to this was a stand of stove and greenhouse plants from Mr. Jameson's Nursery. Last but not least, Glasnevin as usual nobly supported by a company of its best the present year's first field day of the Royal Horticultural Society of Ireland.—E. K., Dublin.

SOME NEGLECTED PLANTS.

[A paper read by Mr. R. PINNINGTON, The Gardens, Blacklow House, Roby, at a meeting of the Liverpool Horticultural Association.]

IN dealing with this subject I am conscious of the possibility of being able to only touch the fringe as it were of a list of plants which are much neglected by the majority of cultivators, and that notwithstanding the great progress made in the introduction of new plants and the vagaries of fashion in the present day are worthy of being more extensively grown. What interest would be centred in many gardens if some of those older plants were again cultivated in real earnest! In this paper I have selected half a dozen plants, the cultivation of which I will deal with as briefly as possible.

CALLICARPA PURPUREA.

Anyone seeing the magnificent specimens of this singularly beautiful plant, with its clusters of purple metallic-like berries, as grown by Mr. Latham at the Birmingham Botanic Gardens, cannot fail to be impressed with its usefulness from a decorative point of view. It is a grand plant for a warm house, and when in berry comes out in striking contrast to other occupants. It was introduced from the East Indies over seventy years ago. The plants are not difficult to grow, and may either be raised from cuttings or seeds. If cuttings are placed in sandy soil, put into a brisk heat and carefully shaded they will very soon root, but I would give a word of advice not to let much moisture remain on the foliage whilst they are rooting, as it often causes decay.

When rooted place them in 3-inch pots, using two parts leaf mould, one of loam, and some coarse sand. Keep growing quickly, and carefully syringe, and when ready move into 6-inch pots, using two parts loam, leaf mould, horse manure, and coarse sand. When the flowers can be seen opening maintain a drier temperature. When the berries are formed, supplies of weak liquid manure and soot water may be given at intervals, the latter doing wonders for both foliage and berries. When the berries are well coloured, the plants will bear a rather lower temperature, and are certain to find hosts of admirers. If required, grand specimens may be grown by the second year by cutting the shoots well in and keeping the plants in a warm moist atmosphere. The same routine of cultivation may be pursued as advised for the plants grown from cuttings.

LESCHENAULTIA BILOBA MAJOR.

There is no denying the fact that amongst the whole range of blue flowered plants, we have nothing to supersede the charming shade of colour in the flowers of this beautiful *Leschenaultia*. It is so uncommon nowadays, and so little thought of, that when one meets such a charming bank of healthy well flowered plants as that staged by Messrs. Balchin & Son, Hassocks Nursery, Brighton, at Manchester Whitsuntide Show last year, it makes one long to see them back in their

former position of some thirty years ago. But there is another point in its favour which makes it most useful, and that is the freedom with which it can be grown and flowered in small pots, for the greater number of the plants above mentioned were in 4½ and 5-inch pots, and on that account useful for decorative purposes.

The cultivation of this plant is not so difficult as many persons would appear to make it, and where there is a careful man in charge there will be very few failures. The end of March or the beginning of April is a good time to commence propagating. Have some clean 4-inch pots, and carefully crock them to half the depth of the pot. Some good fibrous peat and sharp silver sand is a good compost in which to root the cuttings. The rougher portions should be placed on the crocks, then fill nearly level with the rim, make moderately firm, and give a sprinkling of sand on the surface. Then with a sharp knife take cuttings about 2½ inches long, and if they can be obtained with a heel so much the better. A pot of the size I mention will hold nine cuttings comfortably, and these should be dibbled carefully in. Water through a fine rose and remove to a propagating pit, taking care to shade from the sun. In a month or five weeks they will be ready for potting, the same compost may be used, and pots 3 inches in diameter. After potting remove to a genial temperature, keeping the plants near the glass, shading from strong sun and pinching the growths frequently. When these small pots become filled with roots others an inch or so larger should be given, but as I said before the plants flower very well in small pots. When well rooting in the fresh soil the plants should be removed to a cooler house, where, with careful watering, they will give ample compensation for all the trouble in growing them. The plants may be grown into larger specimens by affording much the same treatment as one would give Heaths.

PLUMBAGO ROSEA.

Often as *Plumbago capensis* may be seen, it is by the merest chance that one meets with the charming variety *rosea*, which is useful for growing in a warm house or stove during the winter months. Its cultivation is of the simplest character, and I feel certain that anyone cultivating it for the first time will soon make satisfactory progress. The old plants as they go out of flower should be pruned, and if kept in a moist house and syringed they will soon make fresh growth. When the shoots are from 3 to 3½ inches long they may be taken off, and half a dozen placed in a 4-inch pot, using soil of a sandy nature. A slight watering, and they are ready for removal to a warm house or propagating frame, where they will, in such a place as the latter, be ready for potting in about three weeks. Four-inch pots are suitable size for the first potting, using two parts leaf mould, one loam, and one silver sand. Keep them in a brisk heat, being careful in the watering until the roots are forming freely, and shade from strong sun.

When the roots fill the small pots remove to others 6 inches in diameter, and these will be found convenient in which to flower them. For this potting the compost should consist of three parts good fibry loam, and a remaining part dried horse droppings and sand. Until the plants are established in this compost a genial temperature is best for them, and as the weather becomes warmer they may be kept in a warm pit, a month or so in a cooler frame adding much to the strength of the plants. About a couple of pinchings of the points of the shoots will prevent flowers appearing until wanted, and weak liquid manure twice a week will be of much assistance. About September remove to an intermediate house, when in a short time they will commence to push their pleasing spikes of flower, which cannot fail to be admired, and which will continue in good condition for two or three months. For later blooming during the winter useful plants may be grown from cuttings rooted at the end of June, keeping them growing, and giving one pinching of the shoots instead of two during the summer.

THYRSACANTHUS RUTILANS.

If there is one plant more than another that has dropped out of cultivation it is the useful and ornamental *Thyrsacanthus rutilans*. Yet it is worthy of being grown by all, for it adds a pleasing effect to any stove by reason of its quaint drooping flowers, which are of a peculiar shade of red. Where decorative work is carried out to any great extent some fine heads of bloom interspersed with other flowers add a pretty effect by gaslight. The beginning of March is a good time to commence propagating, and if shoots 3 or 4 inches long can be secured there is little fear of any failure in rooting them. Some sandy soil, leaf mould, and sand will do well for the cuttings, inserting four or five round the sides of a 4-inch pot. Water carefully, and remove to the propagating house, where, if kept shaded, they will soon root.

When rooted place singly in 4-inch pots, using a compost of fibrous peat, loam, and sharp silver sand, keeping to the same temperature, and when the plants are taking to the new soil see that they do not suffer from want of water; frequent syringings will keep the foliage free from thrips and spider. At that stage the plants will need their points pinching out so as to give a greater wealth of bloom. About the end of May they will be ready for their final shift, 6 or 8-inch pots being very suitable for the first season. An important point in this potting is to have the pots carefully drained, for no plant suffers sooner through being waterlogged, the leaves assuming a sickly hue, which quite spoils them when in flower. The same compost may be used, and a second stopping about the middle of June will be found sufficient. For a time after this last potting an intermediate house suits best, so as to have them fitted for their summer quarters, the place I grow them in being a warm pit. Here the plants are kept well syringed and occasionally supplied

with weak liquid manure, and of course admitting air on every favourable occasion. Shade from the sun during the summer, or the leaves will soon lose that pleasing shade of green which it is so essential to retain. It is not wise to leave the plants in a pit much after the middle of September, as they are very susceptible to cold; therefore remove them to a warm house, where in a short time the flowers will begin to expand and droop in panicles for a length of over 2 feet.

After flowering is over the old plants may be cut back, kept well syringed, and if grown a second year handsome specimens with abundance of flower will be the result; but where room is a consideration the one-year system is the best. Besides thrips and spider, the brown scale is a most destructive enemy, but if persevered with in its earlier stages the sponge and water will soon exterminate it.

CLERODENDRON FALLAX.

This is a most attractive little stove plant, and one which helps to give much tone to a collection of plants. Its bright crimson flowers show up well against the dull green leaves, and flowering in winter and being dwarf in habit, rarely growing more than 10 or 12 inches high, it can be used in a variety of ways. Regarding its propagation, I may mention that there are three ways in which it may be increased, viz., from seed, from pieces of the roots, and from the young shoots. Seeds are freely produced, and if sown in a pan of sandy soil and placed in a propagating case will very soon germinate. Immediately they can be handled place them in 3-inch pots, using peat, leaf mould, and sand. Carefully water until the roots are moving, and when well established move into 5 or 6-inch pots, using lumpy peat and coarse sand. During the summer an intermediate house will answer very well, syringing well amongst the leaves, or red spider and aphides are sure to make their appearance. Weak liquid manure given twice a week tends to keep the foliage healthy and materially assists the flower spikes. If grown from cuttings select fairly matured shoots, and if from roots any small pieces from 1½ to 2½ inches in length will soon grow, the after treatment being the same as recommended for seedlings.

URCEOLINA AUREA.

What a charmingly quaint bulbous flowering plant this is, and what a picture well-grown plants make, bearing their singular but striking umbels of flower of golden yellow with pale green edge! It is closely allied to the *Eucharis*, and the cultivation may be exactly the same where facilities are afforded for growing them together; but there is one other point in favour of the *Urceolina*—namely, it may be grown in a lower temperature than the *Eucharis*. I am always certain of this plant when in flower receiving a favourable notice from visitors.

The compost I use consists of rough fibry loam and coarse sand. I drain the pots well, and fill to about three parts with the soil. A good sprinkling of sand is then given, and five bulbs are placed in a 6-inch pot. They are then removed to the stove or intermediate house, and sparingly watered until growth commences, when they cannot very well have too much both of clear and diluted liquid manure, the latter imparting a deep colour to the foliage. When the flower spikes begin to show less water should be given, and the plants ought to be kept in this condition all the time they are in bloom. I may remark that the plants will bear a much lower temperature whilst in bloom, a warm greenhouse being a suitable position, and the flowering period is thus greatly prolonged. It is a plant never attacked with insects, and if anyone has given up its cultivation, I feel convinced that to grow it again would prove interesting to both employers and employed.

ABSORPTION OF ODORIFEROUS VAPOURS BY ORANGES.

AMONG the subjects brought before a meeting of the Scientific Committee of the Royal Horticultural Society on the 24th ult., Dr. Bonavia exhibited specimens of Oranges, and submitted the following communication:—

Not long since I submitted to the notice of the Committee a curious fact connected with the tainting of the Orange pulp and juice with the aroma of a box containing musty damp hay. On that occasion there were in the box four different kinds from Australia, and all were tainted with this musty aroma, and remained so tainted for weeks, after having been unpacked and aired. On several occasions I have bought from the shops Blood Oranges, which left on the palate an after-flavour of Onions. In one instance a lot of Blood Oranges were so strongly tainted with this Onion flavour that they were scarcely edible. I did not observe any such taint in other kinds of Oranges.

I could not account for this strange flavour in the Blood Orange of the shops, which, according to my experience, both in the Mediterranean and in India, is one of the finest flavoured Oranges in existence.

However, with the experience of the Australian box of Oranges, I thought that possibly Oranges from Spain may be sometimes shipped in the same vessel with Spanish Onions, and stored in the same hold during the voyage. Thus, the Blood Oranges might get tainted with the Onion aroma, which would pervade the surrounding atmosphere.

In order to verify this suspicion, I wrote to the great fruit brokers in the City, Messrs. M. Isaacs & Sons, and put a number of questions to them. They very kindly and promptly answered all my questions, which are rather astonishing. They said:—

"1, A fair quantity of Blood Oranges are grown in the district of Valencia, which has also become in the last few years one of the most

important districts for producing Onions, and in many cases both Oranges and Onions are grown very closely together.

"2, Blood Oranges are often stored in the same warehouses as Onions before they are shipped, and also before and during packing.

"3, We would say that there are few steamers which bring Blood Oranges from Spain that do not bring Onions in the same hold.

"4, After being landed, Oranges and Onions are stored very often in the same floor, sometimes for a couple of weeks together."

So it appears that Valencia Oranges are surrounded by an Onion-tainted atmosphere from the time of their growth on the trees to the time they are sold in shops.

I think this is enough to account for the strange Onion-like flavour that I have detected in several lots of Blood Oranges sold in the London shops.

Other kinds of Oranges from Valencia must come in contact with a tainted atmosphere, but for some reason I have not detected this taint in other than Blood Oranges.

The question that now remains to be answered is this: Why is the Blood Orange more subject to atmospheric contamination than other kinds? Is there any ingredient in the Blood Orange which has a special attraction for the aroma of Onions?

I am not in a position to attempt any reply to this question.

I have put some Blood Oranges, which were already slightly tainted, in a box with a chopped Spanish Onion for ten days, and now submit them to the Committee for examination.

I may add that Messrs. Isaacs & Sons have kindly offered to send me a few Oranges, which may not have come in contact with Onions, for experiment. If I get them, I may perhaps be able to submit the result of further investigations in this direction.

GALEOPSIS DUBIA.

A CORRESPONDENT sends us a spray of the above-mentioned plant with the remark that he "has never seen anything like it before." No doubt there are other readers who likewise are unacquainted with *Galeopsis dubia*, or *ochroleuca* as it is sometimes called, and we therefore reproduce a sketch (fig. 57) prepared from a plant that flowered in the Royal Gardens at Kew. This *Galeopsis* is a member of the Labiatae family, the Hemp Nettle, and is an example of a native plant succeeding well under cultivation, and making a beautiful border plant. It is an annual, requiring a somewhat sandy soil, in which it grows freely and flowers during the late spring and summer. The flowers are yellow, varying slightly in the depth of colour, sometimes very pale or rarely white, while forms have also been observed with a purplish tinge. They are large and clustered at the apex of the stems, the leaves being sharply cut at the margins. This *Galeopsis* is widely distributed in Europe, but is somewhat rare in England, being regarded by some writers as a colonist. It is readily raised from seeds, which are produced freely.

SYRINGING "MALMAISON" CARNATIONS.

THE concise note of Mr. J. Hamilton on this subject (page 327) is evidently advanced in a spirit of confident exaltation. Indeed, he attempts to lead readers to the conclusion that syringing causes spot and fungus on these plants. This illusion, however, is easily dispelled, as there are many growers troubled with fungus who never have syringed their plants, and the probable reason why Mr. Hamilton is more successful since he has adopted the non-syringing system is that he has learned to understand their cultural requirements in other respects better.

If Mr. Hamilton had read my previous remarks about the matter (page 102), he would have found no difficulty in interpreting the phrase "Use the syringe with persistent intelligence." I then advocated the practice of syringing the material on which the pots stand on, and the foliage of the plants in bright weather. It may be that such well-known growers as Messrs. Jennings, Douglas, and Roberts do not syringe; but how many gardeners have such splendid conveniences for the growth of Carnations? With houses devoted solely to their culture, shading from bright sunshine and damping between the pots obviates to a great extent the necessity for syringing. Hundreds of gardeners, however, grow a few dozens of these Carnations, which they are compelled to keep in houses in which other plants are grown. In such cases shading is impracticable, and I am convinced, after many trials, that judicious syringing is one of the best known methods of keeping "Malmaisons" in good health, and of preventing the spread of fungus wherever the plants are grown under the conditions above indicated.—H. DUNKIN.

AURICULA EXHIBITION AT MANCHESTER.

THE Show of Auriculas and Polyanthus in connection with the National Auricula Society, which had been postponed from the previous Tuesday, was held in the Botanical Gardens, Old Trafford, on Saturday last. The display was not very large, but many of the exhibits were of fine quality.

In the class for six dissimilar Auriculas Mr. T. Lord, Todmorden, was

a good first, staging Rev. F. D. Horner, Geo. Lightbody, Mrs. Potts, Acme, Prince of Greens, and Mrs. Dodwell, the latter gaining the prize for the best Auricula in the Show. Mr. B. Simonite, Sheffield, was second, having Ruby, Henry Wilson, and Dr. Hardy (Simonite) as his best. Third, Mr. Irving Hind, Halifax, who had Black Bess and Acme conspicuous. Fourth, Mr. W. Midgley, Halifax. Fifth, Miss Woodhead, Halifax. Sixth, J. Stokes, Birmingham. Seventh, Mr. J. Clements, Birmingham. For four dissimilar the first and second prizes were the same as in the previous class, Mrs. A. Potts, Rev. F. D. Horner, Geo. Lightbody, and Acme forming Mr. Lord's exhibit; whilst Mr. Simonite had particularly good Luna (Horner), grey edged, and Jupiter, green edged. Mr. Midgley made a fair third, and Miss Woodhead fourth. Mr. Richard Gorton, Eccles, was first for two dissimilar, having Achilles and a good plant of Heatherbell; Mr. Jas. Wood, Staleybridge, was second; Mr. Thos. Buckley, Staleybridge, third; and Mr. J. W. Bentley, Stakehill, Castleton, fourth.

For a single Auricula, green edged, Mr. T. Lord scored with Rev.



FIG. 57.—GALEOPSIS DUBIA.

F. D. Horner; Mr. R. Gorton second with J. S. Hanaford (Simonite), Mr. B. Simonite taking all the remaining six prizes in this class. In the class for a single Auricula, grey edged, Mr. T. Lord first and second with Geo. Lightbody and Lancashire Hero; third, Mr. J. Stokes with Alex. Meiklejohn; fourth, Miss Woodhead. For a single plant, white edged, Mr. T. Lord first and third with Acme and Conservative; Miss Woodhead being an excellent second with Heatherbell, Mr. Simonite gaining the fourth and fifth positions. For a single self Mr. Irving Hind took first and third honours with Mrs. Potts and Black Bess; second and fifth, Mr. R. Gorton with a very fine ruby coloured seedling; fourth, Mr. B. Simonite.

The Alpine Auriculas made a charming display, and were in striking contrast to the quaintness of the other varieties. Mr. J. Beswick, Middleton, secured the first honour, showing Mrs. Allen, Mrs. Beswick, Dr. Knott, and Forest Queen. Mr. R. Gorton was second with Bright Eyes and Forest Queen, specially good; third, Mr. J. W. Bentley; fourth, Mr. Jno. Lees, Middleton; fifth, Mr. J. Stelfox. For a single plant, yellow centre, Mr. J. W. Bentley staged a pretty seedling named Winnie, of a deep rich ruby shade; second and third, Mr. J. Beswick with John Allen; fourth, Mr. Bentley. For single plant, white eye, Mr. J. Beswick was first, second, and fourth with seedlings very bright; third, Mr. R. Gorton; fifth, Mr. J. Stokes. Some beautiful seedlings were staged, and found many admirers. Mr. Houghton, gardener to Geo. Holt, Esq., Sudley, Aigburth, a noted Liverpool grower, staged a box of light coloured seedlings.

Polyanthus call for no special comment. For three dissimilar, black grounds, Mr. J. Beswick was first, and Mr. Geo. Thornley, Middleton, second. For three dissimilar, red grounds, the same exhibitors came first and second. For a single plant, black ground, Mr. Beswick was first and second, and Mr. Thornley third.

Miscellaneous exhibits were few, but of excellent quality. A group of plants arranged by T. S. Turnbull, Esq., contained choice and well flowered plants of *Dendrobium thyrsiflorum*, *Cattleya Mossiae*, *Cymbidium Lowianum*, *Oncidium sphacelatum*, and a few *Amaryllis*. A first-class commendation was granted. Mr. Henry Brownbill, Mayfield Nurseries, Sale, had a splendid arrangement of *Spiraea astilboides*, forty vases of *Primula Sieboldi*, two superb boxes of Tea Roses, and choice cut blooms of *Chrysanthemum frutescens*, Princess May, and Duke of York. Miss Hopkins, Mere Cottage, Knutsford, had attractive boxes of cut flowers, consisting of Jack-in-the-Green, Hose-in-Hose, and Pantaloon Polyanthus, also other outdoor flowers. M. Wells, Esq., was deservedly granted a first-class certificate for a choice variety of *Cattleya Mendeli*, Broomfield House variety, having broad pure white sepals and petals, lemon throat, and lilac lip. Some excellent and attractive seedling Carnation blooms came from Mr. Richardson, gardener to J. E. Platt, Esq., Bruntwood, Cheadle.

Mention should also be made of the grounds and gardens, which are in excellent condition. Outside Tulips of various shades are in bloom, and many beds of the useful *Doronicums*. Hawthorns just budding and well kept lawns, all add to the attractions of the gardens. Under glass greenhouse *Rhododendrons*, *Azaleas*, many choice *Orchids*, a fine collection of Palms and other plants bear the impress of good management; and last, but not least, the delightful fernery, with its handsome Tree Ferns, the undergrowth being ample and choice.—R. P. R.



FRUIT FORCING.

Vines.—*Early Houses.*—Vines started at the new year have the Grapes in an advanced stage for ripening; indeed, some are commencing to colour, and will need a circulation of warm, rather dry air. An arid condition of the atmosphere, however, must be avoided, inasmuch as it is sure to induce an attack of red spider. It is imperative to keep the foliage clean and healthy to as long a period as possible. Where red spider has obtained a hold, prompt measures for its destruction must be adopted. Recourse is sometimes had to the syringe, which, even when the water is clear and soft, is apt to more or less damage the bloom of Grapes advanced in colouring. Sponging the leaves is a safe means of preventing the spread of the acari, and taken in hand on the first appearance of the pests is not so tedious as it seems.

Sulphuring the hot-water pipes should only be had recourse to when the red spider is likely to get the upper hand, then it must be judiciously applied, or the fumes will be as disastrous to the Grapes as destructive of the red spider. Sulphur begins to vaporise at a temperature of 170°; the pipes, therefore, must be heated to between that degree and 200° for about an hour, and then the heat may be allowed to fall to the ordinary temperature. The latter part of a calm day should be chosen for the operation, keeping the ventilators open while the pipes are being heated, and when they become sufficiently so apply the sulphur, which, being brought to the consistency of thin cream with skim milk, can readily be put on thinly with a brush. It will be necessary to heat the pipes again in about a week, but they need only be rubbed with a brush moistened in clear water. Where fermenting materials on outside borders have become cold and wet a portion may be removed, leaving enough of the looser material to avoid giving a sudden check, but a moderate mulching is all that is necessary for the preservation of the surface roots.

Houses of Ripe Grapes.—Early Vines have ripened their crops somewhat earlier than usual, and where not overcropped and kept clean the Grapes are well coloured and of excellent quality. Maintain a circulation of air, and allow the temperature to fall to 60° at night. The soil must be kept healthfully moist, so as to keep the foliage in good condition. Moderate air moisture also is essential to prevent the foliage prematurely ripening, and it benefits rather than prejudices the keeping of the Grapes, provided the atmosphere is not stagnant. The Grapes are liable to lose colour with hanging; a slight shade will be beneficial in helping to keep colour, especially in Black Hamburgs and Madresfield Court. A double thickness of herring netting, or a single thickness of pilchard netting, placed on the roof lights is sufficient. It is also desirable, where it can be practised without crowding the principal leaves, to allow a moderate extension of the laterals, which will tend to promote root activity, and assist the Vines to recuperate their wasted energies.

Muscats.—The Vines started in December, and brought forward gently in the early stages, are now beginning to colour. Muscat of Alexandria takes longer to colour than Black Muscat (Muscat Hamburg), and that longer than Black Hamburg and Foster's Seedling or Buckland Sweetwater. The Grapes of the former variety are liable to

shrivel unless the Vines are well supplied with water and nourishment at the roots. When these are provided, a much drier condition of the atmosphere may be allowed than is otherwise safe, and it is absolutely essential to good finish in Muscats, for when kept in a saturated atmosphere there is danger of "spotting," and what is gained in size of berry is lost in colour and quality. Directly the Grapes change colour give a thorough supply of water or liquid manure, following with a mulch of sweet rather strawy material, a couple of inches thickness sufficing, and being dry it will prevent too much moisture arising whilst keeping the soil longer moist. Muscat of Alexandria is liable to have the upper berries of the bunches scorched by the sun when the Grapes commence ripening, which is due to the sun acting powerfully on the epidermis, whilst, perhaps, though imperceptibly, covered with moisture. As a safeguard against scorching a slight shade, as that of doubled herring or single pilchard netting on the roof lights, should be provided, ventilating early and increasing the air with the advancing sun heat, but allowing a high temperature by that means. A little more time is required with the shade, but it well repays the outlay, or the losses from scorched Grapes are sometimes considerable where the panes of glass are large and the weather bright.

Muscats in flower set freely with a night temperature of 70°, 75° by day artificially, and 80° to 85° or 90° with sun heat, always with a circulation of air. The points of the bunches should be kept well up to the glass. When the caps of the flowers are being cast off, it is advisable to rap the bunches lightly, better still to gently go over each bunch with a camel's-hair brush and follow soon afterwards, or when the caps are off with another brush loaded with pollen taken from free-setting varieties as Alicante, Black Hamburg, and Foster's Seedling. The influence of foreign pollen is far more potent, and secures finer berries than impregnation of a variety of Grape or other fruit with its own pollen, which is often inert from continued in-and-in breeding.

Succession Houses.—Follow up thinning the bunches and berries, also tying, disbudding, stopping, and regulating the growths. Allow crops proportionate to the vigour of the Vines, and retain as much foliage as can have full exposure to light; for on the amount of assimilating power and the supplies of nutriment depends the health of the Vines and their power of swelling and perfecting their crops. Examine the borders at least once weekly, and when dry water freely, assisting those in full foliage and carrying heavy crops with tepid liquid manure and surface mulchings of rich material, or a couple of inches thickness of rather lumpy manure, and not very much reduced. In addition to this mineral food should be provided. The advertised fertilisers are compounded of various salts in a form readily available as plant food, and mainly consist of phosphatic, potassic, and nitrogenous matters, which are especially valuable for Vines and fruit trees. Use a quarter of a pound per square yard every fortnight or three weeks, alternating with water or liquid manure supplies. Well-drained inside borders will take almost any quantity of water after the Vines are in full foliage, it having a sanitating as well as a moisture-supplying effect; and the sweeter the soil or food held in solution the more healthy the Vines will be, provided the foliage is kept clean, has full exposure to light, and the atmospheric conditions are favourable.

Outside borders will not require any water unless there be a deficiency of moisture, then supply it liberally; and to encourage surface roots top-dress with some fertiliser, also mulch lightly if the border has not a good tilth of fine surface soil so as to retain moisture. Ventilate early, it causes accumulated moisture to disperse, gives texture to the foliage and firmness to the wood, besides securing a full amount of stored-up matter. Allow a high day temperature from sun heat, closing early alike to push ahead the crop and to store the sun-warmed atmosphere. At night a rather low (60° to 65°) temperature is best, especially for Vines carrying heavy crops, which require more time than those but lightly cropped.

Late Houses.—Disbudding, also tying and stopping the growths, must be attended to as they become sufficiently advanced. The bright weather has given the foliage a remarkably healthy blue-green colour, so characteristic of healthy active feeders luxuriating in phosphoric, potassic, and nitrogenic aliment. Every advantage of sun heat should be taken to increase the ventilation early in the day, and of closing early in the afternoon, as a means of securing a long day's work, and of vigour and health in the Vines, dispensing with fire heat as much as possible, yet employing enough to keep the Vines in steady progress. Make selection of the bunches that are to remain for the crop, large bunches, especially loose, being the worst for finish; and the medium-sized and compact the best for perfecting properly and keeping. Crop lightly rather than too heavily, and apportion the crop to the vigour and variety of Vine.

Late Hamburgs.—Disbud, tie down, and regulate the growths, not leaving more than can have space for the full expansion of the foliage. In stopping allow two at least, preferably four, joints of growth beyond the show of fruit, and pinch the laterals below it to one joint as made, but above the bunch allow them to extend so as to insure an even covering of the space with foliage that can have exposure to light, afterwards keep them pinched to one leaf as new growth is made. Where the space is restricted closer stopping may be practised, not allowing the laterals to interfere with the principal leaves. Ventilate early and freely so as to insure short-jointed stout wood and stout foliage. Avoid a saturated condition of the atmosphere, yet a genial state must be provided by syringing the borders, walls and paths in the morning and at closing time. Secure proper moisture in the borders, yet

avoid saturating them to soddenness, and to encourage surface roots employ blood and bone manure with, if the soil be liable to crack, a light mulching of lumpy material, adding from time to time a few fresh horse droppings from the stables, but they must be sweetened before use and not employed too liberally on inside borders. These surface dressings induce the Vines to push roots from the collar, and they can be still further advanced by adding lumpy loam and sprinkling it with a handful of some approved chemical manure per square yard after each watering, washing in moderately.

Newly Planted Vines.—When the Vines have taken to the soil, as will be indicated by their growing freely, ventilate early in the day, as the value of growth is dependent more on its sturdiness and solidification than on its length and sappiness, and there is no remedy for a large pith and ill-matured growth. Encourage laterals rather than elongation of the cane, but let that extend and retain all the growth that can have exposure to light. That is desirable where the Vines are weakly, but if they are vigorous it is a better plan to pinch the laterals at the first joint and to one leaf of subsequent growth, stopping the cane at 9 to 10 feet, and allow the uppermost to grow a few joints and then keep all closely pinched. If the cane break into two growths cut away the worst. Supernumeraries intended for next year's fruiting should have the laterals pinched at the first leaf, afterwards allowing them to make a few joints of growth if weak, otherwise pinching to one leaf, pinching the cane at 8 or 9 feet of growth, taking every possible care of the leaves on the cane, not allowing them to be interfered with in any way by the laterals. Keep the soil moist, but not very wet, closing early with plenty of atmospheric moisture.

THE KITCHEN GARDEN.

Runner Beans.—When the seed of these are not sown before the first week in April it usually germinates quickly and strongly, and the plants are not often injured by frosts. On some soils and under high cultivation the earliest sown rows keep in a healthy productive state till cut down by autumn frosts, but where they are liable to fail before the end of the season fewer rows should be sown now and a second sowing be made early in June. In either case provide a well manured deeply dug site, and in very hot and dry positions large trenches should be prepared as for Celery, with this difference, that they should be more nearly filled with manure and soil, finishing by banking what is left of the soil in the form of a trough with a view to facilitating watering operations in the summer. These Beans may be grown in single rows, and supported with one row of upright stakes laced together near the top, or they may be sown in double drills 9 inches or so apart, and have two rows of stakes made to meet near their tops. In the former case the rows should be 6 feet asunder, and another 2 feet allowed for the double rows. Sow thinly in drills 3 inches deep. If poultry or other enemies to the gardener interfere with either the seed or plants when very young sow in boxes or pots and plant out when large enough or before running growth commences.

Field Culture of Runner Beans.—The bulk of Beans sent to the markets are grown in the open fields and without the aid of stakes. The seed is sown thinly in drills 3 feet asunder, the plants are duly thinned out to 12 inches or more apart, and never allowed to form any running growth. If the latter is kept constantly snipped moderately hard back, strong bush-shaped plants develop and the crops are heavy. Those who may be induced to try this method of culture in gardens will have to be very persistent in this topping the plants, and should mulch the ground with strawy litter with a view both to keeping the soil moist and the crops clean.

Cropping Between Beans.—Several weeks or even months elapse before Runner Beans require or greatly shade the whole of the ground usually devoted to them. Supposing the ground is in a free working state early Potatoes might be advantageously grown between the Beans, two or three lines going between the rows 6 feet and 8 feet asunder respectively, and a single row between the dwarf rows. Cabbage and early Cauliflowers might also be grown between Runner Beans.

Dwarf or Kidney Beans.—When hand-lights can be drawn away from early Cauliflowers, these might well be arranged closely together in rows with narrow pathways between on warm borders, and then be filled with Kidney Beans raised in pots or boxes in readiness for the same. This may mean a gain of a fortnight, the crops thus obtained forming a close succession to those grown in pots or pits. If not already done sow early and successional varieties, Ne Plus Ultra and Canadian Wonder for instance, on warm borders, and also on ridges between early dug Celery trenches. Sow the former type thinly in drills 18 inches apart, and the stronger growing Canadian Wonder, Negro Longpod and such like in drills 2 feet asunder. The foregoing will all be available to gather from well in advance of Runner Beans, as would also the new race of running Kidney Beans. The latter may be sown in double drills and given stakes according, or in single drills, and have one line of stakes 4 feet or more in height placed to them. Under good culture a height of 6 feet is attained.

Vegetable Marrows.—If it is decided to grow these on the plan adopted by market gardeners, the time has arrived for preparing the ridges. Give the preference to a sunny open spot, none answering better than the west side of Runner Beans running from north to south, and the southern side of the rows of Beans happen to be running from east to west, as a little shelter from strong winds is desirable. Open a trench 4 feet wide, removing the best of the top soil only. In this trench place about 18 inches of well decayed stable manure, and then

return the soil to the surface of this, quite hiding the manure. A week later, or when the soil is slightly warmed through, sow a few seeds in patches 3 feet asunder through the centre of the bed. The seeds will germinate quickly, and rough protection should be afforded from cold winds and late frosts. Reduce the plants to one or at the most two at each station before they become crowded. If it is intended to raise the plants in pots under glass, the seed may be sown now, and the middle of May will be soon enough to prepare the beds. Temporary protection of some kind must be afforded Vegetable Marrows when first turned out of pots. The bush varieties require nearly as much room as the better known running forms, and are not so continuously productive.

Ridge Cucumbers.—These may be successfully grown, much as advised in the case of Vegetable Marrows, but stand in even greater need of shelter from strong winds. On no account raise the plants in pots long in advance of planting out time, as when starved they rarely succeed well. It is warmth at the roots, rather than a mass of manure, that these delicate plants require, and that is why they thrive so much better on ridges than on large beds of decayed manure.

Gourds and Pumpkins.—For real utility these are much inferior to Vegetable Marrows. Among the former there are many very extraordinary forms which are more or less productive and ornamental, and these may be grown similarly to Vegetable Marrows, only given rather more room, or they may be planted alongside walks, at the foot of sunny walls, and against temporary or permanent framework, with a view to forming shady arbours. Open good sized holes for single plants, or trenches for lines or circles of them, preparing these exactly as recommended for Vegetable Marrows. Either sow the seed where the plants are to grow, or raise the plants singly in 3-inch pots, and gentle heat, and duly harden, and plant out.

New Zealand Spinach.—The ordinary, or true Spinach, is certain to fail during the hottest part of the summer. Making the later sowings on a cool border may help to prolong the supply, but the best way out of the difficulty is to grow a few plants of New Zealand Spinach, the tops in this case making an excellent substitute for the leaves of the true Spinach. A dozen plants put out on a warm border or a sunny spot quite in the open, will yield abundance of shoots, or sufficient to meet the requirements of most establishments. Sow at once, placing a single seed, or at the most three seeds, in each 3-inch pot, and put in gentle heat to germinate. Harden off, and late in May or early in June plant out 3 feet asunder each way.

Various.—If Brussels Sprouts, early Broccoli, Cauliflowers, and Cabbage have been raised thickly in pans, boxes, or frames they must be prepared for the open by being first pricked out on a sheltered border. Make the soil as fine as possible to a good depth, and prick out the plants 4 inches asunder, sinking them to their seed leaves. Protect from cold winds, frost, and slugs. Now is a good time to sow Snow's Winter, mid-season, and late Broccoli, likewise Savoys (early, mid-season, and late), Borecoles, Chou de Burghley, and Couve Tronchuda. Sow well in the open, thinly in drills 4 inches asunder. Good plants will be ready by the time the ground is fit for their reception. It is not yet too late to sow Beet, Carrots, Salsafy, and Scorzonera. If any sowings already made are irregular hoe them up and sow afresh. Lettuce should now be sown at fortnightly intervals in drills where the plants are to remain, as they transplant badly during dry hot weather. A pinch of early Endive seed may now be sown, and Radishes should be sown frequently on good ground. They soon become uneatable during hot weather. Give the preference to the ordinary white and red Turnip-rooted varieties. Mustard and Cress should be sown every week on fresh ground in the open. Shade heavily till the stems are of good length or they will be too short.

THE BEE-KEEPER.

APIARIAN NOTES.

For several weeks past the weather has been bleak, windy, and cold, very destructive to bees that ventured out. Near apiaries the roads are strewn with chilled bees, which has retarded many hives. Unfed hives have suffered least, this being another proof against "stimulating" or "brood spreading."

In their anxiety to work Punics are amongst the sufferers, but are such great breeders that they do not seem affected to any great extent. Carniolans are so hardy that there seems no loss amongst them. I observe a writer stating Carniolans are vicious, rising in numbers at once to the face. This, however, is very different from mine. I have several Punics, daughters of imported queens, isolated last autumn during their virgin state for the purpose of preserving the race pure. None of the young bees show any signs of crossing, being uniform in size and small, like the pure race, but much lighter in colour, the ebony-like blackness being almost absent. I am wondering if being bred in a lower temperature and a higher altitude may have been the cause. An answer to this from scientists would be valuable.

THE LANARKSHIRE STORIFYING HIVE.

Some people cannot be persuaded of the importance, so far as profit is concerned, of having hives containing nearly 4000 cubic inches of space, always meeting the argument with some evasive answer, refusing to look at facts and think over them. At the time I am writing there are many hives, large and small, surrounding mine. In every instance the full sized hives are the most advanced. Beginning with more bees they winter better, and breed more in proportion to the size of the hive.

Most of my appliances I make serve more than one purpose, but with the hives proper I prefer to have them always in position, allowing only in extreme cases any interchange. I have hitherto advised full sized hives, as well as the plan recommended for certain conditions, when it is advisable to work them under the full size, both in the case of swarms and stocks. The third or under division of storifying hives is a great factor in producing good results by admitting bees to it, and in turn shutting them out. After the bees are well into supers re-admit them next to youthful queens, with plenty of space to prevent or retard swarming. How to do so with the Lanarkshire storifying hive is the cause of these remarks.

Presuming the hives are well forward with bees, and there is brood in the two upper boxes in every comb except the outside ones, and some brood in the centre combs of the under box, transfer the one to the other, taking care that no brood is destroyed. When the above is accomplished put a sheet of perforated zinc between the under and middle box, fix a landing board to the latter, and place a trap to the entrance of the under box; the bees will leave by it and enter the doorway above. After the hive is working to the desire of the bee-keeper, fold back the hive from the under box a little, and withdraw the zinc, closing the upper entrance. The above plan may be modified in many ways suitable to the successful working of swarms or stocks.

A SUCCESSFUL BEE-KEEPER.

A few years since an entire novice in bee-keeping inquired through the *Journal of Horticulture* how to manage bees to a certain issue, having failed to get satisfactory information from another quarter. In some correspondence lately with that person I learn he had a handsome income from his half score of hives last year, not including nearly £12 in prize money, gold, silver, bronze medals, silver cup, and certificates of merit, awarded at the various open shows at which he competed. My correspondent competes with his own property only, and has beaten many formidable opponents in open competition.

STAMPING SECTIONS AND SUPERS.

I observe the mode of stamping sections and supers by the secretary of shows before being filled by the bees, so as to place owners of large and small apiaries on the same footing at the competing table, has been adopted by the Dumfriesshire Bee Society. It will be remembered several articles from my pen appeared some time since in the *Journal of Horticulture*, and which plan I advocated for years before. It is to be hoped it will be a success, and for ever prevent that dishonourable practice of competing with bought or borrowed goods.—A LANARKSHIRE BEE-KEEPER.



* * All correspondence should be directed either to "THE EDITOR" or to "THE PUBLISHER." Letters addressed to Dr. Hogg or members of the staff often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post, and we do not undertake to return rejected communications.

Seedling Pelargonium (W. Smith).—If the plant has a dwarf habit and is free flowering it is certainly worth propagating. The truss of bloom you send is above the average size, and being semi-double the pips are very effective.

Sensitive Plants (T. Arnold).—In addition to those named in your letter—viz., leaves of *Mimosa pudica* and *Dionæa muscipula*, hairs of Sundews (*Drosera*), stamens of *Berberis* and *Sparmannia africana*, stigma of *Mimulus* and its allied genus *Diplacus*, the following plants have sensitive organs:—*Oxalis sensitiva*, *O. stricta*, *Averrhoa Bilimbi*, *Æschynomene americana*, and *Cassia nictitans*.

Auriculas (A. A.).—We received Auricula blooms several days ago, and waited for a letter in reference to them till they withered. They were border Alpines such as may be raised from packets of seed, and quite deficient in the florists' properties that would entitle them to a place on the exhibition table. No note was taken of the varieties under their respective numbers for the reason indicated—your accidentally omitting to post the letter sooner.

Destroying Aphides (G. G.).—The insects are green fly (*Aphis rosæ*), which are best destroyed by steeping 4 ozs. of quassia chips overnight in a gallon of water; boil ten minutes, strain off the chips, and add 4 ozs. of softsoap, which should be dissolved in it as it cools. At this strength it will kill black fly (*A. cerasi*) on Cherries, and brown fly (*A. persicæ*) on Peach trees, applying with a brush, or dipping the shoots in the solution and while warm, syringing the tree with clean water fifteen minutes after it has been applied. For Rose aphid dilute with hot water to 2 gallons, dipping the worst infested growths in it, and then syringe the whole bush, choosing a calm evening, and the following morning syringe thoroughly with clean water. This will free the bush of the vermin and their filth.

Judas Tree (B. T.).—The botanical name of this tree is *Cercis siliquastrum*, and bears racemes of rosy purple Pea-shaped flowers. In many gardens in the south of England it grows and flowers well as a standard, like the Laburnum, but in the north appears to require a wall. The flowers are esteemed by some as an addition in salads, from their agreeable piquancy. Old writers are in conflict in respect to the identity of the tree on which the traitorous disciple Judas hanged himself. Sir John Maundeville says that in his day there stood "the tree of Eldre that Judas hange himself upon for despeyr." Gerard in his Herbal (1597) says "the Judas Tree is thought to be that whereon Judas hanged himself, and not upon the Elder tree, as is vulgarly said." This belief is held by the French and Italians.

Vine Leaves and Shoots Damped (F. K.).—The Alicante leaves are simply damped by water dripping or condensing and resting upon them for a considerable time. This has destroyed their tissues, and the mould that followed is a saprophyte—that is, a fungus living on dead organic matter. It is *Penicillium glaucum*, common on decaying vegetable substances. The mischief to the Vines has been accelerated by the cold and damp, Alicante being most liable to suffer, as it has downy foliage, which holds the moisture and prompts decay. Besides, the Alicante requires more heat than Black Hamburgh—indeed, it ought not to be grown in a cool house. The only thing to remedy the evil is to keep the house warmer, admit air more freely, and supply less moisture. The cold, stagnant, and saturated atmosphere is the cause of the mischief.

Insects on Seakale (Mrs. J. H.).—The "small grubs" are perfect "spotted snake millipedes" (*Julus pulchellus*). The pests are very destructive to the plants you name, also many others, and are somewhat difficult to destroy, as they harbour about the crowns or stems of the plants. The ground infested may be dressed with nitrate of soda, $\frac{1}{2}$ oz. per square yard, having it finely powdered by crushing on a hard floor, and distributing evenly on the ground, close up to the plants, but not on the leaves. It will benefit every kind of crop applied at this season, but it would have been more efficacious against the millipedes had it been spread sooner and over the whole ground, plants included, repeating about this time, as before stated. To keep the pests from Strawberries procure some Mangold Wurzel, cut them into slices about an inch thick, and place them on the ground beneath the Strawberry plants. Examine these baits every day, and the pests that lurk under or upon them may soon be cleared away. Carrots, Beet, or even raw Potatoes may be substituted for the Mangold Wurzel baits.

Aerial Roots for Vines (G. G.).—The following extract from Mr. Barron's book on "Vines and Vine Culture" will answer your question regarding aerial roots:—"These are so called from their being produced on the stem of the Vine and their being suspended in the air like so many threads. They are of the same character as the true roots, and only require to be brought into contact with the soil to become such. These air-roots are sometimes produced in great profusion from every part of the stem, frequently attaining a foot or more in length, and so give the Vine a strange appearance. There is no particular harm in these adventitious roots, *per se*, but their presence betokens a want of proper action on the part of the true roots running naturally in the soil. They are a sign of bad health, and are frequently the precursors of shanking. They give evidence that the proper roots are not in a condition to supply the great demands of a large expanse of foliage, &c., and that, aided by a warm moist atmosphere within the house, Nature is trying to supply this want. Close warmth and moisture will induce the formation of such roots from Vine stems at any time. But if the true roots in the border are in a perfectly congenial condition no air or adventitious roots will be produced in any ordinarily well-managed vinery. They are, in short, the result mainly of the roots being in a cold wet border. To prevent their formation, or to recover Vines subject to this evil, the amelioration of the borders must be seen to. Some varieties of Vines, such as those of the Frontignan class, being of a more tender constitution, are more subject to the formation of air-roots than others. When they are produced they need not be cut off, except for appearance sake, for they will wither up and die as the wood ripens."

Lilium longiflorum (R.).—This is what we presume you mean, though you have contounded it with Amaryllis. The soil that best suits these Liliums, including the Bermuda form, consists of equal quantities of fibrous loam and peat with silver sand freely added, but some growers succeed very well with them without the aid of peat, substituting leaf soil and decayed manure for this. They may either be started in quite small pots and given a liberal shift after these are well filled with roots, or the bulbs can be placed direct in flowering pots. In the latter case one bulb may be placed in a 5-inch pot or three bulbs in a 7-inch pot, surrounding them with sand and just covering them with soil, also allowing a good depth for a top-dressing of rich compost when top growth is active. After the bulbs have been potted, set them altogether on a bed of ashes, and completely cover with more of the same. Saturating rains should be warded off. Uncover when top growth has well commenced and transfer to a cool house to flower. Avoid smothering them with other plants, and keep the points free of green fly.

Tuberose Culture (Rose).—These plants require a fairly rich compost. It may consist of two parts of good fibrous loam to one of decayed manure passed through a sieve, with sharp sand added. Place either one good bulb in a 5-inch pot or three bulbs in 6-inch pots, sinking them up to the necks, and making the soil rather firm. Place them either in a cold frame or under greenhouse stage, completely cover with fine ashes, cocoa-nut fibre refuse, or leaf soil, and take good care to ward off drip. This will start root action in advance of top growth, but when the latter commences the pots must be uncovered, and the plants gradually exposed to the light. The more forward should be given the benefit of a warm place in greenhouse or pit not far away from the glass, and the rest will flower later under quite cool treatment. When the flower stems elongate support with stakes from 2 feet to 3 feet in height; syringe twice daily to keep down red spider, and supply liquid manure to the roots. If green or black fly is found in the points of the flower stems, dust with tobacco powder in the evening, and syringe off the next morning. Tuberose are of no further value after having once flowered.

Repotting Azaleas (Rose).—The best time to repot Indian Azaleas is directly after the flowering period is over, as it is then when both top and root growth is most active. If you had stated when last the plants had been given a shift, or even indicated their present condition, we could have better advised on the subject. As a rule, every third year is often enough to give larger pots. Azaleas can easily be over-potted. Supposing the pots are crowded with roots turn them out, carefully remove the drainage, and with a pointed stick lightly loosen the sides and upper surface of the ball. Shift into clean well drained pots not more than one inch larger all round. If the roots are in bad condition through over-potting, the action of worms or over-watering which may have led to sourness of soil, reduce the balls rather freely, pricking away much of the unoccupied soil, and place in the same sized or even smaller pots than they were in previously. Use a mixture consisting of two parts good brown fibrous peat, one part of fine leaf soil, and one part of brown fibrous loam, with silver sand freely added. Pot very firmly, taking particular care to well drive the soil down the sides of the pots with a flat potting stick. Keep the plants in gentle heat of from 55° to 60°, shade from bright sunshine, and syringe frequently. Not till the young growths are well matured and the buds really set should the plants be turned out of the house, when they ought to be set on a bed of ashes in a cool position, housing again before frosts can injure them.

Destroying Scale Insects on Plum Tree (A. G. G.).—The large roundish insect on the branch of Plum tree is Filbert scale (*Lecanium hemisphericum*), somewhat abundant on Oaks in some localities, especially the American varieties, and is sometimes found on fruit trees. Its malignancy is not by any means equal to its size as compared with other scale insects, but it increases sufficiently rapid to spoil the crops of fruit by its filthy excretions, which cling to the foliage and fruit, rendering them sticky and ultimately black by the growth of a fungus. Ants visit the scales and feed on their secretions. As the insects have not yet left the scales, these being only the parental covering, eggs being hatched beneath and the young protected until the time arrives for migration, it would be desirable to pick off as many of the scale as possible into a vessel and burn them. This done, dress the parts that were affected with an emulsion formed of 1 lb. of softsoap dissolved in two quarts of hot water, add a wineglassful of petroleum, stirring briskly with a switch made of an old broom until the oil is thoroughly mixed with the softsoap solution and forms a sort of cream, then dilute to two gallons with the hot water, stirring while the water is being poured on, and apply with a brush to all the old wood, including all the leafless parts, keeping it from the foliage as much as possible. It should be applied warm (100°). This will kill the young insects that may have escaped from the parent scales, and the tree can be syringed with the remainder of the emulsion by diluting it with double its bulk of hot water, mixing thoroughly and applying through a fine rose so as to just moisten every part. For syringing, the mixture must only be lukewarm (90° to 100°), and it should be kept well mixed while being applied.

Names of Plants.—We only undertake to name species of plants, not varieties that have originated from seed and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in firm boxes. Slightly damp moss, soft green grass or leaves form the best packing, dry wool the worst. Not more than six specimens can be named at once, and the numbers should be visible without untying the ligatures,

it being often difficult to separate them when the paper is damp. (B. B.).—*Ceanothus dentatus*. (G. P.).—From the very fragmentary specimen sent we believe it to be the double-flowering Peach. (H. M.).—1, *Ceanothus azureus*; 2, *Spiraea bullata*; 3, *S. prunifolia*. (A. G.).—*Galeopsis dubia* (ochroleuca); see illustration and description on page 349. (G. G.).—1, *Pyrus Malus floribunda*; 2, *Kerria japonica flore-pleno*. (Mrs. Meade-Waldo).—The bloom sent is a variety of *Narcissus incomparabilis*; we do not name varietal forms. (Radhurst).—1, *Trillium grandiflorum*; 2, white form of *Vinca major variegata*; 3, *Kerria japonica flore-pleno*; 4, *Doronicum excelsum*; 5, unrecognisable, send flowering specimen; 6, *Pyrus Malus floribunda*; 7, *Pyrus salicifolia*. (W. S.).—The yellow-leaved variety of *Valeriana Phu*. (E. C.).—A foreign *Orontium*, possibly a South American species. (Somerset).—*Scelaginella* not in character. (Nemo).—1, *Tiarella cordifolia*; 2, *Saxifraga ceratophylla*; 3, *Phyllodoce*, also known as *Andromeda*, *empetriformis*; 4, *Saxifraga pectinata*; 5, *Ledum latifolium*; 6, *Aubrietia deltoidea*.

COVENT GARDEN MARKET.—MAY 2ND.

BETTER trade doing, with prices firmer all round. The first cargo of Tasmanian Apples to hand, meeting a good demand.

FRUIT.

	s.	d.	s.	d.		s.	d.	s.	d.
Apples, per bushel	2	6	10	0	Peaches, per doz.	0	0	0	0
Tasmanian, per case	8	0	12	0	Plums, per half sieve ..	0	0	0	0
Cobs	45	0	50	0	St. Michael Pines, each ..	2	0	6	0
Grapes, new, per lb.	3	6	5	6	Strawberries per lb.	1	6	5	0
Lemons, case	10	0	15	0	„ morning gathered ..	3	0	5	0

VEGETABLES.

	s.	d.	s.	d.		s.	d.	s.	d.	
Asparagus, per bundle ..	2	0	5	0	Mushrooms, punnet	0	9	to	1	0
Beans, Kidney, per lb. ..	1	0	1	3	Mustard and Cress, punnet	0	2	0	0	0
Beet, Red, dozen	1	0	0	0	Onions, bushel	3	6	4	0	0
Carrots, bunch	0	3	0	4	Parsley, dozen bunches ..	2	0	3	0	0
„ new, bunch	0	9	1	0	Parsnips, dozen	1	0	0	0	0
Cauliflowers, dozen	1	6	3	0	Potatoes, per cwt.	2	0	4	6	0
Celery, bundle	1	0	1	3	Salsafy, bundle	1	0	1	5	0
Coleworts, dozen bunches	2	0	4	0	Scorzonera, bundle	1	6	0	0	0
Cucumbers, dozen	1	6	3	0	Shallots, per lb.	0	3	0	0	0
Endive, dozen	1	3	1	6	Spinach, bushel	1	6	3	0	0
Herbs, bunch	0	3	0	0	Tomatoes, per lb.	0	6	1	3	0
Leeks, bunch	0	2	0	0	Turnips, bunch	0	3	0	4	0
Lettuce, dozen	0	9	1	0	„ new, bunch	0	8	0	10	0

AVERAGE WHOLESALE PRICES.—CUT FLOWERS.

Orchid Blooms in variety.				s.	d.	s.	d.		s.	d.	s.	d.
Arum Lilies, 12 blooms ..	1	6	to	3	0	Pelargoniums, 12 bunches	6	0	to	9	0	
Azalea, dozen sprays..	0	4	0	9		Pelargoniums, scarlet, doz.						
Bluebells, dozen bunches	1	0	2	0		bunches	4	0	6	0		
Bouvardias, bunch .. .	0	6	1	0		Primula (double), dozen						
Camellias, dozen blooms ..	0	9	2	0		sprays	0	6	1	0		
Carnations, 12 blooms ..	1	6	3	0		Primroses, doz. bunches ..	1	0	2	0		
Cowslips, dozen bunches..	1	0	2	0		Pyrethrum, dozen bunches	6	0	9	0		
Eucharis, dozen .. .	2	0	4	0		Roses (indoor), dozen ..	1	0	2	0		
Gardenias, per dozen ..	1	0	4	0		„ Tea, white, dozen ..	1	0	3	0		
Iris, dozen blooms .. .	0	9	1	6		„ Yellow, dozen .. .	2	0	4	0		
Lilac (French) per bunch	2	6	4	0		Roses (French), per dozen	1	0	2	6		
Lilies of the Valley, dozen						Roses, Safrano (English),						
sprays	0	6	1	0		per dozen	1	6	2	0		
Lilium longiflorum, per doz.	2	0	4	0		Roses, Maréchal Neil, per						
Maidenhair Fern, dozen						dozen	1	6	5	0		
bunches	4	0	6	0		Tuberose, 12 blooms..	0	6	1	0		
Marguerites, 12 bunches ..	2	0	4	0		Tulips, dozen blooms ..	0	3	0	6		
Mignonette, 12 bunches ..	3	0	6	0		Violets, Parme (French),						
Myosotis or Forget-me-						per bunch.. . . .	2	0	3	6		
nots, dozen bunches ..	2	0	4	0		Violets (French), per bunch	1	0	1	6		
Narciss, various (French),						Violets (English), dozen						
dozen bunches.. . . .	2	0	4	0		bunches	0	9	1	0		
Orchids, per dozen blooms	1	0	9	0		Wallflowers, doz. bunches..	4	0	6	0		
Pansies, dozen bunches ..	1	0	2	0								

PLANTS IN POTS.

	s.	d.	s.	d.		s.	d.	s.	d.		
Arbor Vitæ (golden) dozen	6	0	to	12	0	Foliage plants, var., each	2	0	to	10	0
Arum Lilies, per dozen ..	6	0		12	0	Genista, per dozen	6	0		12	0
Aspidistra, per dozen ..	18	0		36	0	Lilium Harrissi, per dozen	18	0		30	0
Aspidistra, specimen plant	5	0		10	6	Lycopodiums, per dozen ..	3	0		4	0
Azaleas, per dozen	18	0		30	0	Marguerite Daisy, dozen ..	6	0		12	0
Cineraria, per dozen ..	6	0		9	0	Mignonette, per doz...	6	0		9	0
Dracæna terminalis, per dozen	18	0		42	0	Myrtles, dozen	6	0		9	0
Dracæna viridis, dozen ..	9	0		24	0	Nasturtiums, per dozen ..	1	6		6	0
Ericas, per dozen	9	0		24	0	Palms, in var.. each	1	0		15	0
Euonymus, var., dozen ..	6	0		18	0	„ (specimens)	21	0		63	0
Evergreens, in var., dozen	6	0		24	0	Pelargoniums, per dozen ..	12	0		18	0
Ferns, in variety, dozen ..	4	0		12	0	„ scarlet, per doz. ..	4	0		6	0
„ (small) per hundred ..	4	0		8	6	Roses, various, per dozen ..	12	0		36	0
Ficus elastica, each	1	0		7	6	„ (Fairy), per dozen ..	9	0		12	0
						Spiræas, per dozen	6	0		12	0

Roots in variety for planting out, in boxes or by the dozen.



GREEN CROPS FOR SHEEP.

FODDER crops mentioned in recent articles have mainly a special value in winter and spring; some of them are also available for the flock in early summer. All have a place in

mixed farming, and we desire now to add to our list of such useful crops others which if sown now come into use during that critical time in August and September when pastures are so often brown and bare that our flocks and herds are pinched by hunger and fall off in condition. It is precisely then that a well wrought out scheme of cropping tells, and we can bring our reserve forces into use with such marked effect. Farm for a crisis always, say we; superabundance need cause no waste. It is just because we have late Swedes, Rye, Sainfoin, and Tares for the flock in the spring and early summer that we are able to reserve so much permanent pasture for hay. So, too, in the autumn; a full supply of Green Maize, Sorghum, Mustard, Rape, and white Turnips renders us practically independent of ordinary grazing land for horses, cows, store cattle, and sheep. Quite delightful is it to watch the eagerness with which such wholesome food is consumed. Depend upon it a change of diet occasionally is good for all animals; even more important is enough food, and nothing like short commons at any time. Undoubtedly it is sound practice always to have such crops—always to use them in season, and if rich pastures and kindly seasons induce a vigorous growth of pasture herbage run the mowing machine over it and make an extra stack of silage. That is really wholesome nourishing food, which late herbage left to become so much half-dead fog assuredly is not. The fog is cleared off by half-starved cattle exposed to cold and wet out on the open pasture—bad management and waste; the silage by thrifty beasts in snug yards—good management and economy.

Many a time have we been glad to set sheepfolds going on White Mustard in July and August. Sown during May it is a safe crop, and a heavy one in rich soil. Occasionally we have ploughed in a field of it, but we altogether prefer to fold it off, the sheep droppings combined with the urine imparting much more fertility to the land than such a green crop would. When land is badly infested by Charlock (wild Mustard) it is a good plan to wait in spring till a first crop of Charlock is well up, then to plough it in, sow 20 lbs. of White Mustard per acre, and feed it and the second crop of Charlock off together. If the land is poor it may be quite worth while giving the Mustard a dressing of 1 cwt. per acre of nitrate of soda. It is well to remember that the effect of the nitrogen is not only to invigorate but to accelerate growth, and to render the Mustard ready for the folds a week or two sooner than it otherwise would be.

Rape is another useful green crop, which, if sown at the same time as Mustard, is an excellent successional crop to it, as it requires a month longer for its growth. It is usually sown at the rate of 6 lbs. per acre, and left unthinned; but on really good land no green crop repays so well for singling like Turnips, and a free use of the horse hoe between the plants. Then it is that a growth is had among which the sheep are lost to sight, and upon which they thrive well. This is an example of high farming suitable for the Fens, but not for thin light land, where there should be no thinning, and where a dressing of nitrate of soda might be worth while.

A field or few acres of white Turnips sown in May or June is undoubtedly useful—often very useful; but having regard to the expense of cultivation it is a crop to keep well within bounds, and to which we seldom accord a leading place. It is just a question of ways and means, of possible requirements, of crop proportion as to whether any are grown. Labour is much less if chemical manures only are used, but in southern or eastern counties with a low annual rainfall it is unsafe to sow early root crops on the flat. The only safe plan is to ridge over furrows well filled with farmyard manure, so that the plant can root into and become established quickly. It is then safe from drought, and by drilling some nitrogenous manure in with it the growth is quickly out of harm's way from insects. If land is devoted to the cultivation of all or any of these crops by all means let such cultivation be thorough, be satisfied with nothing less than full crops and well-fed stock. That is the only way to meet hard

times, but remember crop and stock must both be right—the one as nutritious food, the other as a marketable commodity in high demand, and upon which a profit is possible.

WORK ON THE HOME FARM.

The showery weather has been very favourable for seed germination and the brisk growth of Mangolds, and of all other April sown crops. Cabbage plants from seed beds have been transplanted with ease and certainty; those sown in April bid fair to come into use early in autumn, a good start being all important for this crop. Horse and hand hoes must be kept going briskly among each crop as soon as the plant is visible along the rows. Never suffer weeds to become so large as to be difficult to destroy. We like frequent turns of the horse hoes especially, both to keep the surface stirred and to keep down weeds. For annual weeds this is sufficient, the surface being kept clean and open till the crop is sufficiently advanced for hoeing to be dispensed with. Push on all such work, get all singling of Mangolds, early Swedes, Cabbage, and Kale out of hand quickly. The season is so forward that haymaking will be in hand much sooner than usual, and we must be ready for it and have as little as possible of other work to do then.

On all really rich pasture there is now a full bite of herbage; cows and horses are out till dusk, but we have had them in at night, as there have been occasional frosts, also hailstorms and heavy rain. Again have we seen how valuable hovels are on pasture. We would, if it could be managed, have one in every enclosure. If they are deep and commodious, with a clean, hard, dry floor, and shut off from cold wind, all live stock will go to them without being driven. Thus shelter is assured—shelter from cold and wet, with this we ask for nothing better for our horses, cows, and store beasts than the mixed herbage of Grasses and Clovers which good pasture affords. It is really curious to see how quickly horses out to grass become sleek, and their coats glossy. That is so generally; there are exceptions, and when a horse does not thrive on green or any other food, it is certain to require special treatment. It may be only a matter of teeth, which a veterinary surgeon can set right, or it may be constitutional debility. A little observation enables one to see what is wrong, and generally to apply a suitable remedy.

OUR LETTER BOX.

Butter Failure (D.).—Without a close inspection of the cows, their surroundings, and everything having connection with them and the dairy, it is impossible to give definite advice, because there are so many things which may spoil the butter. Have you carefully considered what happened when the butter first became bad? It is evidently caused by some adverse influence under which cows or the milk then came, and have been subsequently. What change was made in the dietary, if any? Did it happen in the first week of going out on pasture? If so there is something noxious among the herbage. Other causes are the milk of stale cows—that of even one such cow may cause it; foul odours in contact with milk, cream, or butter; dirty hands of milkers; any accumulation of stale milk in fissures in the sides of churn, milk pail or other vessel in contact with milk or cream before the churning. Is there a drain stoppage near the dairy, or any accumulation of filth near the cowhouse? There is undoubtedly a clear reason for such a change from good to bad butter, and we hope our hints may assist you to discover the cause and to apply a remedy. In your inquiry take nothing for granted, place no reliance upon any evidence at second hand, but look thoroughly into everything yourself.

METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude, 111 feet

DATE.		9 A.M.				IN THE DAY.				Rain.	
1894.	April.	Barometer at 32° and Sea Level.	Hygrometer.		Direc- tion of Wind.	Temp. of soil at 1 foot.	Shade Tem- perature.		Radiation Temperature		
			Dry.	Wet.			Max.	Min.	In Sun.		On Grass.
		Inchs.	deg.	deg.		deg.	deg.	deg.	deg.	Inchs.	
Sunday	.. 22	29.962	46.7	42.2	N.W.	48.0	54.6	34.5	85.1	27.1	—
Monday	.. 23	29.635	50.3	43.5	E.	47.9	56.1	39.1	94.9	31.2	0.010
Tuesday	.. 24	29.708	54.8	47.0	S.E.	48.0	59.0	43.2	98.0	36.6	0.585
Wednesday	25	29.673	48.3	47.2	S.W.	48.2	60.6	46.1	106.3	42.0	0.110
Thursday	.. 26	29.724	55.0	50.2	S.E.	49.0	60.3	46.2	106.0	41.0	0.040
Friday	.. 27	29.65	53.2	48.6	W.	49.6	62.0	45.8	112.6	41.7	0.062
Saturday	.. 28	29.893	53.2	48.9	N.	49.8	60.6	42.8	106.3	38.1	0.125
		29.751	51.6	46.8		48.6	59.0	42.5	101.3	36.7	0.932

REMARKS.

22nd.—Cloudy at times, with much bright sunshine.
 23rd.—Cloudy early; a few gleams of sun in morning; almost continuous, but very slight rain from 4 P.M. to 10 P.M.
 24th.—Sunny early; overcast from 10 A.M., almost continuous rain from 11 A.M. to 3 P.M.
 25th.—Continuous rain from 6 A.M. to 10 A.M.; generally sunny from 10.30 A.M. to sunset. Rain from 7.10 P.M. to 9 P.M.
 26th.—Showers in the small hours; alternate cloud and sunshine from sunrise to sunset, with frequent showers in afternoon.
 27th.—Alternate cloud and sunshine most of the day; heavy rain from 12.20 to 1.15 P.M.
 28th.—Alternate cloud and sunshine in morning; overcast afternoon; heavy showers of rain and hail at midday.
 Temperature very similar to that of the previous week, rainfall in excess.—
 G. J. SYMONS.



FLOWER GARDENING.

MAY is a busy month in the flower garden, the embellishment of which brings forth the characteristic tastes of many gardeners. There may be less utility derivable from this department than from any other portion of a garden, but it gives ample scope to the artistic mind, and affords much pleasure to the observer when properly carried out. How this should be done is, to a very great extent, a personal matter. Conventional methods are practised in numerous private gardens, the changes wrought each season being, in some instances, hardly perceptible; but there is no legitimate reason why these should be persistently followed. A turning aside from the well-worn track is frequently welcomed and productive of good, even though it be of a slight character. Many gardeners who are now busily engaged preparing for "bedding out" may therefore do worse than to take a second thought prior to commencing operations. Much, of course, depends on the circumstances of each case and the material that is forthcoming, but the remarks that follow may prove suggestive to some readers of the *Journal of Horticulture*, particularly to young gardeners who are responsible for the judicious adornment of flower gardens.

With regard to what is known as the flower garden proper—that is, a series of beds more or less geometrical in design, it is the general rule to fill this section with summer-blooming plants immediately the spring flowers are past their best. It will not be long ere the latter have done their work for the season, inasmuch as many of the plants are already commencing to fade, and the sooner they are removed the better. When this is accomplished the preparation of the beds demands attention. If they were manured and well dug during the autumn nothing further need be done to them now other than levelling the soil with a rake, but if stimulants are needed no time should be lost in getting them in the soil. Rich ground, however, is not desirable for bedding. It causes flowering plants to make gross growth at the expense of bloom, and, as a rule, detracts from the beauty of foliage plants. On the other hand, very poor land is equally unsatisfactory, and should therefore be avoided; a moderately light fertile medium being the desideratum. There is another point that is worthy of more than a fleeting consideration—the proper hardening of the tender plants. Last year "bedding out" was commenced in some gardens much earlier than usual, owing to the remarkably warm weather which then prevailed, and it has been prognosticated that a similar period will be experienced this summer. The past though has taught many of us that the weather prophets are not always to be relied upon, and however favourable the season has proved up till the present, it does not follow that May will be entirely free from cold winds. Most gardeners are acquainted with that brown tint on the leaves of improperly hardened Zonal Pelargoniums, and which does not enhance their appearance. Then it not unfrequently happens that Coleuses, Alternantheras, and numerous tropical plants lose their bottom foliage when planted prematurely, and never recover their normal health all through the season. These little disappointments can be easily prevented by exercising forethought, and the learned may pardon the apparent superfluity of mentioning them, this being done for the benefit of inexperienced readers.

In the southern counties the second week in May is an excellent time to commence bedding, and after the middle of the month

the work should be pushed forward as expeditiously as possible. Where cold winds and late frosts are liable to occur, however, it is advisable to defer planting for a week or so, commencing then with the hardier plants. This rule, in fact, ought in every case to be adopted, it being fatal to many plants if placed in the open beds too soon. As to the actual arrangement of the plants, that, as before remarked, depends on local circumstances. No hard and fast rules can be laid down in regard to this matter, but some suggestions might easily be given, and if possible these can be put into practice. Those readers who have the opportunity of paying an annual visit to the metropolitan parks doubtless sometimes learn "a wrinkle" as regards bedding, for in these popular resorts many choice combinations may frequently be seen, and some which might advantageously be imitated in private gardens. It has been for some years past my fortune to see and take a special interest in the summer bedding as practised in many parks and gardens in different parts of the kingdom; but, to my mind, some of the best examples were in a metropolitan park last year. Some of these beds were simple and yet wonderfully effective. Two in particular attracted attention, these presenting quite a fairy-like appearance. The beds were round in shape, the centre of one being filled with *Dactylis glomerata variegata* and *Lilium lancifolium album*, amongst which were plants of *Asparagus plumosus*. The latter had made excellent growth, and being of a light graceful character contrasted with the erect *Liliums*, but harmonised splendidly with the edging of *Begonia Worthiana*, a mass of blossom. The companion bed to this was occupied with well flowered plants of *Begonia semperflorens rosea* and *Königa maritima variegata*, from which rose the charming *Eulalia gracilima*. One could do no other than notice how freely the various forms of *Begonia semperflorens* were used for bedding purposes in the parks last summer, and it would appear that there is a probability of their proving dangerous rivals to the tuberous-rooted ones. Whether this will really come to pass or not is a matter of no importance so far as these notes are concerned, but private gardeners will do well to observe the usefulness of the fibrous-rooted *Begonias* for the purpose mentioned.

Within the limit of one article it is practically impossible to enumerate all the good examples of bedding that have come under my notice, but a few more arrangements may be worth recording. A bed filled with *Begonia semperflorens rubra*, *Königa maritima variegata*, and *Dactylis glomerata variegata* was very effective, the same applying to another devoted to *B. semperflorens rosea* and *Mesembryanthemum cordifolium variegatum*. When planted outdoors the leaves of the above-mentioned *Begonias* assume a rich reddish brown tint, which forms a pleasing contrast to the lighter foliage of the *Königa* and *Mesembryanthemum*. Another effective combination noticed last season consisted of *Begonia Worthiana*, pink and white Zonal Pelargoniums, with dot plants of *Acacia lophantha*, and an edging of blue *Lobelia*. An attractive bed may be formed by associating scarlet tuberous *Begonias* and *Acacia lophantha* with a groundwork of *Lysimachia nummularia aurea*, edging the whole with white *Lobelia*. Of a similar character crimson *Begonias* and *Grevillea robusta*, set in a groundwork of Harrison's Musk inside a broad band of a white *Viola*, such as Snowflake, make a charming arrangement. Many other instances could be mentioned, such as richly coloured *Begonias*, white *Violas*, with dot plants of the variegated Maize inside a circle of *Iresine Lindeni*, and an edging of *Mesembryanthemum*. But tastes in this direction vary, and what is looked upon as being effective by some may not be so considered by others.

Most persons, however, cannot fail to have noticed the immigration of hardy plants into the flower garden proper during the past decade. This is a step in the right direction, and further progress might be made. There are so many beautiful hardy flowering and foliage plants in cultivation that it is a matter of surprise to find they have hitherto been so rigidly excluded from the flower beds.

What, for instance, have we more delightful than Carnations? These are now being extensively used for the purpose, and with satisfactory results. Beds of pink and crimson Carnations associated with blue and white Violas respectively were amongst the most admired arrangements in one of the parks in London last year. China Roses and Carnations harmonise well, and are by no means to be despised; while some of the dwarf growing Campanulas, Phlox, and Pinks are most effective when employed in this manner. In one garden of my acquaintance two large beds of Gloire de Dijon Roses and Clematis Jackmanni, edged with Dactylis glomerata variegata, make a fine effect all through the summer and autumn, and are much admired by all who see them.

Another interesting phase of flower gardening is that of making selections of sweet-scented flowers. This is well practised in some gardens, notably at Cadland Park, near Southampton. At this place beds are devoted to scented-leaved Pelargoniums, Musk, Aloysia citriodora, and other plants of a similar nature, the whole forming a pleasant feature. With these, Clove Carnations, Stocks, and other "old fashioned" fragrant flowers might advantageously be associated, and this method of flower gardening, if less showy, will in most cases give more satisfaction than the formal "carpet beds," which still figure so conspicuously in many public and private gardens.—C.

THE FRUIT SUPPLY.

I AM of opinion that no greater mistake in fruit culture can be made than that of purchasing a number of cheap trees for no other reason than that of being inexpensive. Two years since I saw in one newly formed fruit garden an example of this injudicious action. No less than 35,000 trees of various kinds were purchased for a very small sum. What was regarded as bush Apple trees were specimens 7 feet high; each of these had one straight stem, the result of allowing the trees to go unpruned from the first. Every tree had produced a few short side spur-like branches at irregular intervals from the base. Taken as a whole they presented a poor appearance, and nothing short of severe pruning could ever hope to render them presentable. My experience is that such trees do not "break back" with sufficient vigour when they have been allowed to grow for three or four years at will. Not only were a great number of the Apple trees in this undesirable state, but the Plum and Pear trees were represented also by such specimens. What was really worse than the result of non-pruning the trees was the fact that the hulk of them were infested with American blight. Not only is this insect pest difficult to eradicate, but its presence checks the progress of the trees. Fortunately, however, the majority of nurserymen do not manage their trees on the lines indicated.

Mr. Chinnery writing some time since in the *Journal of Horticulture* may be right in his assertion "that the greater amount of inferior fruit sent to the markets is grown on trees which have been purchased in open markets." My experience is that in the neighbourhood where I reside, the inferior fruit which, last year, could hardly be sold for 2s. per bushel was produced from trees locally raised and increased in the same way. Take for instance the great favourite Apple in the south of Hampshire, amongst cottagers and small holders, Hambledon Deux Ans. This Apple was raised at Hambledon, a village eight miles from Swanmore. In those parts it would be difficult indeed to find a garden that does not contain at least a good sized tree of this variety. In many instances this sort alone is answerable for the inferior fruit that finds its way to the markets at exceedingly low prices. Some persons say that there are two types of this Apple, one being exceptionally good. Be this as it may, I have never seen a single instance of the meritorious variety. As a long keeper, Hambledon Deux Ans is remarkable, but when kept it is useless for culinary purposes.

There is one aspect that I regard as being favourable, however; that is the almost total suspension of the planting of this variety. There is nothing like bad prices for making persons consider whether they are acting contrary to their personal interest or not. Fruit growers in this neighbourhood are becoming aware that while 3s. per bushel is considered a good price for "Deux Ans" well grown and honestly selected samples of Warner's King, Worcester Pearmain, or Cox's Orange Pippin realise double that amount, and in the case of the latter variety almost treble. It is all very well for some persons to say Apple growing will soon be overdone, but good fruit of desirable kinds will always find a quick

sale. A well known fruit dealer last year said to me in the midst of what some would have called a plentiful supply of Apples, "I am a buyer of 200 bushels to-day if I can obtain what I want—the best fruit of approved kinds."

In November of last year I took particular note of the orchards while travelling from Plymouth to Birmingham by way of Exeter, Bristol, Gloucester, and Worcester, and the year previous through Hereford and on to Shrewsbury through counties noted for fruit culture. In not one single instance did I observe that the old orchards were being replanted or new ones made. Devonshire is famed for its orchards I know, but my experience of them (and this is not a little) does not lead me to say they are patterns of good management. Certainly if a crop of lichen is a criterion Devonshire orchards can well hold their own, for nowhere have I seen trees so heavily laden with this undesirable accompaniment.—E. M., *Swanmore Park*.

IMPRESSIONS OF GUERNSEY.

ON page 338 of the *Journal of Horticulture* I don't chiefly with the flora of this picturesque island, but mention should be made of the great variety that the Ivy assumes. It flourishes in the crevices of the volcanic rocks, and on the thick, earth-topped stone walls on the road sides. I noted entire, palmate, trifid, lobate, and other intermediate forms, very elegant and distinct from our British types.

The birds noted were (on land) the cuckoo, sparrow-hawk (?), wryneck, called here the mackerel bird, because it comes about a week before these fish appear on the coast, chiffchaff, blackbirds far more numerous than thrushes, and the sand martins had just arrived. Of rooks there were a few, magpies more abundant than in Britain, marsh tit, large tit, stonechat, and the ubiquitous chaffinch. Robins and linnets were plentiful on the Fnrze downs and cliffs, and they take on the reddish colour more defined than we have seen them elsewhere, being more like Java sparrows. I saw several washing in a stream, and should not have known them from our British grey linnet but for their cheerful twitter. The butcher bird or shrike was in fine plumage, and, of course, the house and tree sparrows were in evidence. The sea birds are naturally numerous, the cormorants and gulls nesting on the precipitous rocks on the coast; while flocks of oyster catchers were very brilliant on the wing, following their leader just over the waves in a zigzag flight, and turning about in the same way as starlings do, showing their conspicuous white breasts and bodies. Other sea birds were difficult to make out, but the local museum has a very good collection of those which visit the island.

It was early for Lepidoptera, but I observed on Sark some of the green hairstreak, and in Guernsey the wall butterfly, the ringlet, the holly blue, alexis blue, but not any of the Vanessidæ, probably they come later on, and very few of the Cabbage butterfly, one of the brilliant day-flying moths, *Euchilia Jacobea*. It is said that there are many more butterflies in Sark, which one would naturally expect, as that island is much less under culture, as the inaccessible crags leading up from the bay would give an undisturbed feeding ground for the larvæ.

In fruit culture the Island of Guernsey is not so advanced as one would expect. The trees in private gardens are well and perhaps a little over-pruned (in the open) as bushes and pyramids. The wall trees are well done in private gardens, and there are Pears on many cottage walls and farmhouses. The trees seem well set with fruit, but they are very thickly wooded, and one wonders how they can produce fruit worthy of sending to the English markets, but they may form more rapidly in this warm and damp climate than with us. The orchards are sadly neglected, generally too much shut in by timber trees, with an over-abundance of twiggy wood in the centres of the trees, but I understand they are more grown for cider than for dessert or culinary use. At the time of my visit they were looking very beautiful with their wealth of flower. Plums are very scarce.

The most interesting culture is that given to the Figs, which are supported by a scaffold of scantling, and they are then trained flatly on the top, and notwithstanding the frost (alluded to last week) the trees were showing some very forward fruit. As the leaves were not unfolded the kind could not be determined, but they appear to be most prolific, and many of them were 100 years old, and covered a space of 20 to 30 feet square, forming by their shade a cosy summer seat in the hot weather. Those persons who had expended capital by covering them with glass were reaping a good return for their enterprise; where heat is applied the Figs are marketed the middle of April, and present a luxuriant appearance such as one seldom sees.

Apples for markets are quite neglected, the natives being supplied from France, and the Strawberry, Gooseberry, Currant

and Raspberry appear to be beneath the islanders' notice. Nuts do not seem to be grown at all.

In conclusion, Guernsey can be thoroughly commended to any one seeking a rest from business cares. The air is pure and invigorating, and the numerous trips by car, steamer or boat, and the electric railway from St. Peter Port to St. Sampson's, offer a change of scene without fatigue, while the many bays and coast scenes are easily reached, and offer a panorama of picturesque beauty to lovers of romantic and bold scenery. The courtesy of the inhabitants lends a charm to conversation, and all seemed ready and willing to assist with information and direction. The conchologist should not fail to visit Herm Island, the only place where any variety of shells can be found. The history of the Channel Islands is worth reading, and the churches are mostly ancient, and being built of granite are solid structures. As one expects they are mostly Norman, and date about 1100 and onwards. The "Druidical" remains point to a very early Celtic occupation, and the barrows on Laucresse Common should be visited, also the remains at La Rochelle. The local antiquarian is most obliging in exhibiting his relics to persons who take an interest in such matters, and the museum is a well arranged, but rather overloaded, record of the island products now and in the past.—VISITOR.

FRITILLARIA AUREA.

THIS is a re-importation of a plant once in cultivation in England. Among the millions of bulbs collected by Mr. Whittall in Asia Minor and sent to the Royal Gardens, Kew, in 1893, a few of the bulbs of *Fritillaria aurea* were included. The vicinity given by Mr. Whittall for the Golden Fritillary is Yoryi Barsali. In the gardens it is grown in cold frames, and was exhibited in the alpine house, where it flowered in March and the first half of April. The blooms are of a rich golden yellow of a soft clear tone. The vertical veinings are of pale green of about the same depth as the yellow; the irregular transverse markings are purple in colour, becoming more accentuated and richer in tone near the base, particularly on the margins of the outer members of the perianth. The height varies from 5 to 8 inches. Two flowers usually appear at the summit of the stem with seven or eight glaucous green leaves below. The plant should prove, through its early appearance, rich colouring, ease of culture, and graceful habit, a valuable addition to the border and cool house. The illustration (fig. 58), has been prepared from a sketch taken at the Royal Gardens, Kew.

QUESTIONABLE ADVICE.

THE note by Mr. Wm. Taylor on page 336 is to me very suggestive. It illustrates that every gardener, old as well as young, but more especially young, should use his head, his eyes, his brain, in making his daily round. It is that cultivation of keen and accurate observation, clear, calm judgment and prompt decision which makes up the gardener's skill, and is more needed in his vocation than in any other, simply because he has to do with such a varying class of elements—heat, air, water, climatical variations, and plant diversities.

Gardening cannot be learnt by any mechanical process; a gardener educates himself. Lessons from past experience can, and ought to be given to the young and the inquirer generally, but the application, individual and practical, can only be done by the learner himself. This truth needs impressing more and more. Much may be said for persons who attempt to give practical advice such as that quoted by Mr. Taylor. That advice was no doubt given from the writer's own practice, and with him answered perfectly, and to some who followed it. It may have helped them either in confirming their own practice, or in modifying some other manner of procedure; but every gardener of much experience knows that what Mr. Taylor says is absolutely true, and if it only sets some to think on the subject your correspondent will not have written in vain.

I am reminded of the demand made upon gardeners by would-be gardeners, especially lady gardeners, as to how they should act with such-and-such a plant. If you give a plant to a lady friend she is sure to ask, "And how often shall I water it?" "Oh, when it needs it," of course you say. "Yes, but how often?" she will persistently say; "once a week or twice a week, so that I may know?" This corners you, and you get out of it as well as you can by saying that she is to watch it, and give it water just when it needs it. "Very good," she says; "but how shall I know exactly when it needs it?" I thought you could tell me just how often I should do it," and she looks at you with a look that makes you feel small all over, as it seems to say, "I don't think you are

much of a gardener." So, in desperation, you say, "Once or twice a week," and get rid of the subject, as you think. Not so, however. The next time you pass her house, or she meets you, she will probably say, "Oh, Mr. —, I want you to look at my plant. It does not seem to do well." You look, and the probability is that she has so watered it that the soil is sodden, or that she has watered by tablespoonfuls or so, and that has run off down the sides of the pot, and the poor plant is dying from thirst. Ah, me! "what troubles do environ" all of us when we try to do good. To remedy matters you give some more advice, which in this particular case is all right. She gives this advice to some neighbour



FIG. 58.—FRITILLARIA AUREA.

and it is all wrong in her case, and the poor man gets condemned with the harshest words the wronged one can find.

Let it be understood thoroughly. All advice is conditional, even if general; and it is the brains, the thought, the observation, the discriminating judgment, the calm but prompt ruling and action which makes the best advice resultful in healthy ends. This is so in many phases and walks of life, but specially so is it true in gardening. The *Journal of Horticulture* has done much in stimulating thought in its readers (I particularly should like to mention Donald Beaton and Robert Fish) in the past, and is doing so every week by all its writers, and none will quicken it more, according to my judgment, than the short note by Mr. Taylor.—N. H. P.

IN A SCOTTISH MANSE GARDEN.

THE beginning of May is always to me the fairest period of the year. It is full to overflowing of fragrant blossoms and passionate woodland songs. Of the wild flowers perhaps the sweetest is the snow-white Wood Sorrel (*Oxalis acetosella*), which is so unambitious

in its perfect beauty, that unless we were by instinct lovers of Nature, it might elude our gaze. It was Wordsworth who sang in his great Ode to Immortality of even such tenderly beautiful flowers as these—

"Thanks to that human heart by which we live,
Thanks to its tenderness, its joys, its fears,
To me the meanest flower that blows can give
Thoughts that do often lie too deep for tears."

By the epithet "meanest" is signified lowliest, for we can hardly believe that to him who has been called, not without expressiveness, the High Priest of Nature, anything that has been created was mean. I do not hesitate to affirm that this special adjective, in its ordinary significance, is not applicable to any flower.

There is not a floral creation of gracious Nature that is not impressive in its own peculiar sphere. Here, therefore, is a consummate teacher, from whom we can hardly learn too much. Transplant the Golden Broom from the depths of the glen, with its masses of vegetation, to the open, sun-scorched spaces of the modern garden, where it is almost impossible to discover the smallest suggestion of grateful soothing shade, and you will find that it is, in the language of that great evolutionist, Mr. Herbert Spencer, "out of correspondence with its environments." Even the Wild Cherry, so gorgeous with blossom at this special period in our shadowy woodlands, is infinitely more picturesque in such a situation, often overhanging a murmuring, meandering rivulet, than it would be if planted in ornamental grounds. Nevertheless, in shady recesses of an old-fashioned garden (partly modernised) such as mine, certain sylvan flowers which seem to grow there naturally, such, for example, as the Herb Robert, whose formation, so nearly akin to that of the sweet-scented Pelargonium, rivals the delicate structure of the most artistic Ferns, seem perfectly correspondent with their floral surroundings.

There are few flowers dearer to me than the Alpine Linaria, at present covering the walls of my garden with a grace which even the fair *Tropæolum speciosum* could not equally impart. Confronted by great masses of Apple and Cherry blossoms, by crimson and primrose coloured Wallflowers, long lines of Violas, Orchid-rivalling Aquilegias, and Auriculas, whose fragrance equals that of the Cheshunt Hybrid Rose, this Alpine Linaria, so unobtrusive in its aspect, is not less charming in its own peculiar sphere; it is freely permitted to entwine with its blossoms the grander glories of the Maréchal Niel (and surely no privilege could be greater than this); it has not been "born to blush unseen, or waste its sweetness in the desert air." "There's a flower that shall be mine," says Wordsworth, "'tis the little Celandine," and I understand that its likeness is carved upon his tomb. If there is any delicate floral daughter of Nature that I would like to call my own it is the Linaria.

Is that man not the truest possessor of Nature to whom her beauty and significance are, by reason of his reverential nature, his very light of life? To him the imperial Oriental Lily is not more impressive than the Tyrolean Gentian, which in the memorable language of the late Earl of Rosslyn, "robs the Heavens of half their blue;" to him the regal Rose, with all its far-shining splendours, is not more dear than the Lily of the Valley, concealing its sweetness among its lustrous leaves.

Infinitely noble and elevating is the horticultural art; but if it be artificial and formal in its methods; if it does not draw its perennial inspiration from Nature, in whose infinite domains discord is undiscoverable, and harmony and perfect symmetry are universally predominant, it is unworthy of the name.—DAVID R. WILLIAMSON.

NOTES ON GLADIOLI.

I HAVE been much interested in Mr. Brotherston's statement on pages 256 and 274 of the *Journal of Horticulture* with regard to the culture of Gladioli in Scotland, and as an old amateur cultivator of these fine autumn flowers I may be able to supplement your correspondent's observations by some of my own, more especially of the so-called hardy sections. It has always been a puzzle to me how Gladioli could possibly succeed commercially in Scotland, knowing as I do the dripping character of its autumn. I have always entertained the idea that the corms could ever be well ripened, and consequently a large proportion of them must have perished, and yet some remarkably fine stands have from time to time come from thence.

Mr. Campbell of Gowrouch used for some years to bring up a very fine collection to the Crystal Palace Show in September, showing exceedingly healthy growth and long symmetrical spikes, their only fault being that having been once shaded to protect them from the weather they had not the same brilliancy of colour as those grown in the south. My memory still goes back to a bloom

of Mabel which I saw at Edinburgh exhibited by Mr. Smith of Paisley, which I think was the finest bloom of that variety that I have ever seen. It is tolerably clear from Mr. Brotherston's statement that my doubts are somewhat justified, for he speaks of some growers who import their corms annually, and this would be unnecessary if they could be well ripened at home; not that this is, however, the only difficulty. For instance, I have had as much loss as could have been, I think, experienced by any Scotch grower, but not from the same cause. I can and do ripen them well, but long before the time for ripening comes I lose every year a large number from what I believe to be a disease, the cause of which I cannot trace, unless it be as Mr. Burrell says, that I have too much humus in my soil. I study their requirements as much as I well can, and yet they never respond to my delicate attentions by keeping themselves free from disease. I always manage to grow some grand blooms and to exhibit well, but my losses are notwithstanding many and great. Most of the amateur growers whom I have known have experienced the same difficulty, and nearly all of them have one after another abandoned their culture, although two of them, Mr. Lindsell of Hitchin and Mr. Fowler of Taunton, have shown during the last few years flowers which have rarely been equalled and never surpassed. With regard to the question of their hardiness, we all know that that is a relative term; things may be hardy in the Isle of Wight which are not so in the midland counties of England or in parts of Scotland.

It has always been a puzzle to me why these hybrids of Lemoine's, and others who have followed in the same track, should have been considered hardy. Lemoine himself never said so, but in his catalogue calls them "*Gladiëuls à grande macule*," and tells us that they require some protection in winter. The parents are not hardy, they come from that paradise of bulbs South Africa. We know that the varieties of Gandavensis are not hardy, and therefore I could not understand why hybrids from these two sources should obtain a character which neither of the parents possessed. However, the general impression seemed to be that they were hardy I determined to give them a fair trial, and have grown them now for some years. The first that I obtained from Lemoine were planted in a warm border in front of my greenhouse. Two mild winters followed, and all the bulbs survived and flourished, and I began to hope that their assumed character was genuine, but on mentioning this to Mr. Burrell he said, "I do not believe it, wait till you have a hard winter." However, like many other people, I did not take advice, but procured a number of what were then newer varieties both from Lemoine and Souchet. The result was disastrous. The corms flourished and flowered well; but a winter with severe frost followed, and as a result all my corms, both those that I had grown myself for some years and those I had imported perished, with the exception of one variety Duguesclin, and why this survived I could never understand. I could see from the character of the flowers of the newer sorts that a good deal more of the blood of Gandavensis was to be found in them; the flowers were more open, and had to a great extent lost the hooded character of the upper segment, while the large spot which is so characteristic of *purpurea auratus* had considerably diminished in size.

Having thus in my own mind clearly established the fact that they were not hardy, I determined last year to give them another trial in a different way. I planted a number of corms, and did not take them up in the autumn as I do those of Gandavensis, but covered them over with some 6 or 8 inches of coal ashes, and now I find on removing that the corms are sound and shooting out strongly, but then we have had a mild winter. There was, it is true, a very sharp frost in January, perhaps sharper than any we had in the winter of 1892, and I think probably had the corms not had the protection of the coal ashes they would have perished in the severe frost of the first week in January, but having that they were in no way affected by its severity.

The question now occurred to me if these Gladioli, which have so much of the Gandavensis blood in them, will survive our winters when they have a little protection, may not the pure hybrids of Gandavensis fare as well under the same conditions? Accordingly I determined to leave a certain number of these in the ground, treating them in the same way. These I find are sound, and are shooting out fairly well. This opens out the question whether I may not treat more of my Gandavensis corms in the same manner. It would be an immense saving of trouble, and although I might not probably obtain quite as fine blooms, yet, as my exhibition days are over, I might well be content with smaller spikes. I have always felt that it was a severe ordeal for such fleshy corms to have to be dried so completely as they are when taken up. Still, the same thing happens with Hyacinths and many half-hardy bulbs.

With regard to the second section, which Lemoine has called Nancianus, which is a cross between Saundersi and the Lemoinei section, they seem to me to hold very much the same position. It must not be forgotten that Nancy has severer winters than we

experience in these islands, and this was another reason that made me doubt whether the corms of this or the preceding sections could be hardy there, and if Lemoine had asserted it I should have been very hopeful that we might have found them to be so in most parts of our islands.

Of course there would be differences of opinion as to the relative duty of the flowers of these sections, and of those of Gandavensis. To my own mind they stand on a much lower level than the more recent flowers of that section. I hardly agree with Mr. Brotherston, that the earlier varieties raised by Lemoine are more beautiful than the later sorts; but this is, of course, a matter of opinion, and when they approach so closely to the flowers of the Gandavensis section I should prefer the latter, and certainly those that in any way lose the grand characteristic of the deep large spot lose one of their chief beauties. This, then, is the conclusion of the whole matter. Where plants for decorative purposes are required, and where the necessary protection and care can be given to them in winter, these varieties may be safely recommended; but let no one trust to the conjectures or unsupported statements of those who call theirs hardy.—D., Deal.

OUR VILLAGE ON MAY DAY.

WILL you leave your musty old papers and the din and turmoil of Fleet Street, and come with me, Mr. Editor, for a May day ramble in our northern village? We will enter the park at the eastern extremity. Do you miss the rookery? Yes, last year when Ash was so dear, it was cut down, but the birds soon found a new home, just across the grass to the belt of woodland adjoining the pleasure grounds. Some of the birds, full of dignity and importance, went further afield, and have made a new home in the shadow of the church chancel. They possibly know they are on sacred ground, and their only foe is a stormy night like the one last February which laid so many giants low.

Do you note the charming green of our trees, unsoiled as yet by dust, uncut by sharp winds? The grass, too, more now than the whole of last year's crop. See the fantastic chimneys of the old Hall, the pretty quaint house, empty now, alas! The old garden wall with archways cut through it giving glimpses of rich promise of fruit and vegetables beyond. A few weeks ago your heart would have "danced with the Daffodil" from the tiny golden jewel, *Narcissus nanus*, which glowed on the old herbaceous border to "Her Majesty" and her imperial brother "The Emperor." Where do you find such beauty as in these old world gardens—gardens tended for decades by careful skilful hands? Turn to the old church close by, old trees, old graves, old monuments; the border round the church set out like a miniature garden, and all over, above, and around the graves the sweet Violet has found itself a home. The school is close here. A new device for interesting the children in the growth of their gardens and the fields—a case of thirty small tubes belonging to thirty small folk, and kept filled with fresh flowers. In one there was the other day a bell-shaped flower almost black. There is an arrangement under the tubes for a name card. This is the nursery for our young rustics, under a bright clever master full of sympathy and love. Do you wonder that our children do well, and are a credit to themselves and their village?

Let us take this turn; it will lead down past such a show of Lilac, both white and purple. Did you ever smell anything so delicious? See, there are Chestnuts and Laburnums, only waiting for a little more sunshine. Do not you think with me, he is a wise man who erects his own memorial in his lifetime? I do not think cold stone is the best or most lasting. In the vicarage garden you see evergreen traces of a kindly but irascible vicar, who passed away many years ago. Possibly for health the place is too much grown up; but where will you begin? You cannot take that Spanish Oak half across the lawn. Those purple Beeches block some windows; but you cry, "Oh! spare them." What of the Chestnuts, and hosts of flowering trees—charming now, and still more so in the glowing autumn? You say, "Let them be. I cannot destroy such beauty." We have no hills here, only a placid slow-flowing river and woodlands. Ah! yes; that will compare well with Sherwood or other historic growths. Here alone I guess will you find 500 acres of Lilies—yes, Lilies of the Valley. Their noble owner gives delight to thousands by sharing his treasures with them. Look at the hosts of other wild flowers—blue, white, pink, yellow; every sort, and all so full of life.

Just here turn up the old road, work of the Romans; in this hollow later on you find the Wood Aven, which gleams like burnished gold in that damp bottom? Gather it, make a noble posy of Marsh Marigold, mix with them a few Bluebells, and then tell me if the colouring is not almost of the gorgeous East. Just a hint here; nothing lights up a dark entrance hall like a posy of

this kind. Will you walk through our well kept woods, where "Old Jack" has reigned supreme these many years? I am going to show you something you will like. Shall I astonish you? Were you out last evening, just in the gloaming? Did you see an apparition—a dense white moving mass of wings? Shrill cries, a sudden sweeping down on the grass, a sudden rising; then all still, all quiet. Did you ask a labourer passing what these birds were? Did he answer, "Black 'eads fra' gull ponds?" Were you any wiser? Gulls here, so far from the sea! Yes; come, see. Quietly, now over this hill. There is a gleam of water, the flash of a million wings, the cry of parent birds fearful lest you disturb their homes by the reedy bank. Tread carefully, nests are around you everywhere—some callow broods just hatched, some ready for the water, many birds sitting, but such a scene of life and activity as you could hardly imagine, and all in the heart of the woods. Years ago a pair of birds made their home here; the fostering care afforded they have repaid a thousand times. Can you tell me how much we owe these creatures? See them swarming at every plough tail, after every harrow, and look what a feast they have after the rain has brought out the insects and worms. They come to us early in March when the Ash buds are black; they leave us for the sea when our harvest is ripening.

The keeper would like you just to peep at his pheasant hatching. See all these old "barndoor," each with at least seventeen precious eggs. Here is work present and future, and barring accidents and disease will not there be a show when our Squire has his "big shoot" at Christmas time? This is an agricultural parish; we fancy we do things pretty well. Have not our Shire horses made the greatest average at our sale on record? Here are brewers who believe in our Barleys, and of late we have tried our hand at "Taties," and there was a whisper of Her Majesty in connection with a long price in your huge City this spring, and our little Scotch woman Jeannie Deans with a Lincolnshire flavour has travelled to many parts of England this spring in the form of "seed."

Just slip up through "Dolly Platts" behind the old "grove." Here is Fishpond Close—in new hands, surely, or there would not be these ridges, strongly suggestive of Ireland. "Why, old S, you have no business here in this cold wind, and rheumatism so bad." "Eh, Missus, I wor forced to come out and see if them Bruces had begun to show a bit, I'se fair stalled of settin' b'd fireside. I shall be seventy-four next week, and have worked all my time man and boy in this parish, and last few years I've set and soiled a sight of Taties. Marster is a strange man for new soarts, and I think he's in the right of it." Good-bye, old fellow! It is such as you who are the backbone of Old England; men who do with pride a fair day's work for a fair day's wage; men who know every inch of the ground, and what it will best produce on the farms on which they work, and who watch with deep interest any new departure which is started with the hope of meeting the times.

Must you think of the station? Stay, what is there behind this Yew hedge? A small, trim garden, and, by the Prophet, row upon row of labelled Rose trees! Just in the centre—is that Weeping Willow? No, it cannot be; yet it is—a white Cluster Rose budded on a standard Briar; perhaps a greater source of pleasure to its owner than all its high-bred rivals from Paul's and Rivers'. We must go in here, if just for a minute. Well, times are hard, and farming pays badly; still we plod on, Practice with Science, and plenty of loving labour. Next time you come this way spare us more time, and we will have out the old horse, and go and criticise our neighbours. Well, if you must go, good-bye! Come again soon, and see what the "promise of May" has brought.

P.S.—My children tell me old Billy Havercroft has a Rose out, and that there is a bit of full-blown May in the low pasture.

[We have been, seen, and found all true; and the best of all the narrator not crushed by "depression."]

DAMSON CULTURE.

THE question of fruit culture for profit is one which is being continually brought before our notice as a means by which tenant farmers and others can increase their incomes without going to a great expense in outlay. In this district of North Staffordshire Damsons are largely grown, and in an average season prove a great help towards paying the rent of the tenant farmer and small holder, as they appear to thrive and do well with little or no cultivation after the trees are planted. During the last few weeks the hillsides have been very gay with blossom, the pure whiteness of the thickly bloomed trees standing out against the fresh green of the bursting hedgerows and surrounding vegetation.

The trees are chiefly seedlings, which spring up of their own accord in the hedgerows. They are then planted in rows in the fields and

meadows, or when the hedges are cut, left standing to grow and fruit there. In some districts, where the soil is of a stiff though rich nature, the trees grow very fast, and are in good bearing in a remarkable short time after the seedlings are planted. Under the above conditions the fruit gets to a large size, and is of a luscious fleshy nature, always commanding the best prices in the market. In other districts, where the subsoil is composed chiefly of soft sandstone, and is of a brashy character, the fruit does not get so large, but it is harder and firmer, and keeps much longer after gathering, therefore finding its way into the market after the rush is over.

An average crop used to be considered to pay the best, as when the trees everywhere were laden with fruit the prices fell so low as to hardly pay for gathering. In latter days, however, since jam factories have become so popular, and Damsons have been so extensively used in the manufacture of dye, there appears to be a ready sale for all that can be produced, as agents and dealers come from the manufacturing districts, and eagerly purchase all they can. When the fruit is ripe, "Damson getting" is quite an industry, and experienced hands can earn good wages. In districts where Apples and Pears do not seem to thrive I think the Damson should be given a trial, and would in most cases, I am sure, prove a successful experiment.—G. H., *Alton Towers*.



ROSE SHOW FIXTURES IN 1894.

- June 13th (Wednesday).—Colchester.†
 " 20th (Wednesday).—Isle of Wight (Shanklin).
 " 26th (Tuesday).—Westminster (R.H.S.).
 " 27th (Wednesday).—Windsor (N.R.S.) and Richmond (Surrey).
 " 28th (Thursday).—Canterbury, Eltham, and Sutton.
 " 30th (Saturday).—Sittingbourne and Brockham.
 July 3rd (Tuesday).—Farningham, Bagshot, and Diss.
 " 4th (Wednesday).—Croydon, Reigate, and Tunbridge Wells.
 " 4th (Wednesday).—Ealing.
 " 5th (Thursday).—Hereford and Norwich.
 " 7th (Saturday).—Crystal Palace (N.R.S.).
 " 10th (Tuesday).—Gloucester and Wolverhampton.*
 " 11th (Wednesday).—Hitchin and King's Lynn.
 " 12th (Thursday).—Bath, Harleston, Woodbridge, and Worksop.
 " 14th (Saturday).—New Brighton.
 " 17th (Tuesday).—Helensburgh.
 " 19th (Thursday).—Halifax (N.R.S.), Halesworth, and Trentham.
 " 21st (Saturday).—Manchester.
 " 26th (Thursday).—Southwell.
 " 28th (Saturday).—Bedale.

* A Show lasting three days. † A Show lasting two days.

Any date of Rose shows, or of other horticultural exhibitions where Roses form a leading feature, not named above, I shall be glad to receive as soon as fixed, for insertion in future lists.—EDWARD MAWLEY, *Rosebank, Berkhamsted, Herts.*

EARLY ROSES.

WE have every appearance of an abnormally early Rose season. While looking through the garden at Saltwood Castle, near Hythe, last week, I saw beautiful blooms of Gloire de Dijon, Maréchal Niel, and Reine Marie Henriette growing on the inner part of the Castle wall. I have no doubt by the time this note appears there will be scores of buds open, not only on the varieties mentioned, but on many others, which were looking very promising. The Teas in the open beds were all showing good plump buds. Of course the garden is very much protected by the old outer wall.—JAS. B. RIDING.

AUSTRIAN COPPER and Fortune's Yellow, with Banksians, many of the hardier Teas, and such Hybrid Bourbons as Charles Lawson and Sir Joseph Paxton, are in bloom by the second week in May, so we may certainly look upon the present season as exceptionally early. Gloire de Dijon and Madame Falcot are quite showy, and blooms of Abbé Brameral may open any morning. Although we have had a few frosts during the past week, they have not been severe enough to harm the more forward growths. These are naturally in the most sheltered positions, and it therefore needs more frost to seriously affect them. Other varieties are moving along in an equally early manner when we take into consideration their relative positions and characteristics. Although we can by no means consider ourselves clear from a spell of chilly weather, there is every prospect of a season almost, if not quite, as early as last. Then where are our blooms to come from for any show later than that at Windsor? With the advantage of a fortnight or so later in season we shall in all probability have to play second fiddle to our northern friends again, not at the later dates only, but throughout the entire Rose season.—PRACTICE.

BANKSIAN ROSES.

THESE charming climbing Roses promise to flower unusually well this season; clusters of blossom buds are appearing over the entire

surface of several large trees trained to the Castle walls here. Many strong shoots, which during ordinary English summers would not have become sufficiently well ripened to flower, will this year do so throughout their entire length. This satisfactory state of affairs is doubtless due to the long season of sunshine experienced last year, as the trees have received exactly the same treatment in the matter of pruning as during the two previous seasons, when they flowered somewhat sparingly.

I make a practice of removing the old worn-out branches in July or August, as well as any very strong or sappy wood, so that the remaining shoots are thinly disposed. The growths made later in the season are entirely removed. In the southern counties these miniature Roses flower profusely every year, and during April or May many a wayside villa or cottage presents a perfect sheet of white or soft yellow flowers, but it is by no means a common experience to meet with similarly well-flowered plants in the midland or northern counties. The slight difference in the climate, I believe, fully accounts for this; it is advisable, therefore, whenever they are planted in the localities last named, to give them the best and sunniest positions.

Plants growing against a south wall which receive the full glare of midday and afternoon sun will succeed, while others having the same aspect, but being partially shaded in the afternoon by projecting buildings or trees, will fail to flower, except in a spring which follows a very bright summer or autumn. Of this I have ample confirmation from plants growing in slightly different aspects.—H. DUNKIN, *Warwick*.

THE NATIONAL ROSE SOCIETY'S SHOWS.

I WAS very pleased to see so good an account of the Roses exhibited at the Drill Hall during the last two meetings, and they certainly deserved all the praise Mr. Grahame has given them. His persistent agitation in favour of early dates for our metropolitan Show should bring about good results; there is great need of some alteration. I am under the impression that when this matter was threshed out in Committee, and at our general meeting two years ago, the decision was come to that the first Saturday in July should be the recognised date. With every prospect of an early season, I, too, fear we shall have an indifferent display to what it should be our greatest endeavour to make the Rose Show of the year.

It does not matter whether the season be abnormally early or not, I feel convinced that a favourable Rose season should see our best blooms in proper condition before the second Saturday in July. I never knew good Roses so late as this, the late date being altogether unseasonable for quite three-fourths of our rosarians unless we had a most unfavourably late spring, and in the latter case I do not imagine it so much matters to a week when the date is fixed. We also have provision made for such a contingency in our northern or provincial Show, and it is during very early years that the best of our Roses are so quickly past. If the first Saturday in July is too early, the third is not so very late, and would generally suit the majority of northern exhibitors. But how about such as the two last years? In both cases we have Roses blooming in April, and expect to be in abundance by the early part of June.

Mr. Grahame has much reason on his side from whichever point of view the subject is met. In the average years of the last decade our northern growers, both amateur and professional, have had equal chances with the rest, yet some ask for a later date still as regards the Crystal Palace Show. In proof of this the nurserymen's trophy (Crystal Palace) has gone to the Yorkshire growers three times, and the Jubilee challenge trophy (provincial) of equal value has been secured by the same firm four consecutive seasons from its establishment, and again last year—five wins out of a possible seven. Again, in 1887, 1889, and 1893, the three earliest years during the decade, we find the same firm carrying off the double event. Seeing we have a late date for the northern or provincial Show, it certainly looks as if the first Saturday in July or the last in June would be a fairer date for southern growers. If we are looking for good Roses before the middle of June, it is quite certain they cannot be cut from the same plants rather more than three weeks later; even the bulk of maiden plants will be over if the present prospects are realised. It is a vexed question, and seems a difficult one to handle satisfactorily. But I, for one member, do not see the necessity for deciding the exact dates months before we can form the remotest idea as regards the approaching season.

As we can neither hurry nor retard our blooms to any appreciable extent, why should not the exact date be fixed at one of the May meetings? This would allow of our forming some idea respecting the earliness or otherwise of our uncertain seasons. The schedules might easily be drawn up and issued as at present, and seeing that only members are allowed to compete, it would not be much trouble or expense to send a post-card to each as soon as the date was selected. We should probably have a more representative meeting of Committee, and if only one-half attended there is little doubt but what a fair estimate of probabilities could be arrived at. Could no arrangement be made with the Crystal Palace authorities to give us the last Saturday in June or the first Saturday in July, if we gave them say two months' notice of the selected date? A week may not seem much to those who do not realise how short is the time most Roses are at their best, but if it is doubtful we shall still find good blooms by the earlier date, it is obvious they will be missing by the second Saturday. I am not writing in this strain because I live in the south, but have honestly tried to look at the matter in an impartial spirit, and I am fully convinced Mr. Grahame does the same.—PRACTICE.



EVENTS OF THE WEEK.—As announced last week there will be a grand show of flowers, plants and fruit at the Antwerp Exhibition on the 13th, 14th, and 15th inst., and doubtless many British horticulturists will attend. On Friday, the 11th, an exhibition of Roses, Orchids, and other plants will open in The Gardens, Old Trafford, Manchester, this continuing until the following Thursday, the 17th.

— **THE WEATHER IN LONDON.**—Cold winds were prevalent in the metropolis towards the end of last week, but since Sunday the weather has been much warmer. Monday was fine, but dull at times, similar weather occurring on Tuesday. Wednesday opened dull with appearance of rain, but at the time of going to press the clouds are passing away.

— **THE WEATHER IN THE NORTH.**—The weather of the first week of May has been in marked contrast to the fine warmth of the end of April. A very cold west wind has prevailed, with frequent showers both by day and night. Tuesday morning was very wet, but calm and somewhat milder.—B. D., *S. Perthshire*.

— **DEATH OF MR. HENRY G. EASTY.**—After long suffering, borne with great patience and fortitude, Mr. Easty died on the 16th ult. at the age of forty-six years. He was a gentleman of accomplishments, an ardent horticulturist, and an occasional genial contributor to our pages.

— **WE** have received part 10 of Messrs. Veitch's **MANUAL OF ORCHIDACEOUS PLANTS**, which completes the work, and a very important work it is. In its complete form the ten parts of which it is composed make two volumes, the first of which embraces the *Epidendriæ*, and the second the *Vandæ* and *Cypripediæ*. We shall return to the subject in a future issue.

— **IRISH CORRESPONDENCE.**—With regret I read Mr. Murphy's note (page 343) on some expressions of mine "calculated (not intended) to bring Irishmen into contempt." I do not regret his courteous reproof, but that there should have been occasion for it. I trust he may have noticed other remarks of mine in previous articles which, though not erasing these pen splashes "which do not adorn," may at least show they proceeded more from thoughtlessness than heartlessness.—E. K., *Dublin*.

— **MARKET GARDENERS' COMPENSATION.**—Many market gardeners will be glad to learn that a Bill to extend the provisions of the Agricultural Holdings Act, 1883, so far as they relate to market gardens, has been brought into the House of Commons by Sir Edmund Lechmere. The objects of the measure are to "give to the tenants of market gardens power to remove conservatories and other buildings erected by them for the purpose of their business; compensation for fruit trees, fruit bushes, and other crops; and power to remove fruit stocks. The Bill applies to current contracts, but expressly excludes nursery grounds."

— **THE GIBSON TESTIMONIAL FUND.**—Mr. John Gibson, until recently Superintendent of Victoria Park, having felt it his duty to resign that appointment in consequence of his long-continued illness, a desire has been expressed by many of his friends to present him with a testimonial in the form of a purse of money, in recognition of his services in connection with the London parks. Mr. Gibson is well known to the horticultural world. His first public appointment was at Hyde Park, which he succeeded to on the death of his father, whom he had previously assisted at Battersea Park. In consequence of continued illness in his large family, and his own ill health, Mr. Gibson has unfortunately been unable to make adequate provision for himself and them, and the Testimonial Committee therefore hope for a liberal response to this appeal. Any contributions may be sent to and will be gratefully acknowledged by the Treasurer, Mr. Harry J. Veitch, Royal Exotic Nursery, Chelsea; or by Mr. James T. Anderson, 135, Commercial Street, Chairman of the Committee. The following contributions have been promised:—Messrs. James Veitch & Sons, £10 10s.; James T. Anderson, £5 5s.; J. Steggall, £5; C. B. Farnham, £2 2s.; John Laing, £1 1s.; Arnold Moss, £1 1s.

— **THE CORPORATION OF NEWPORT, MON.**, have just appointed Mr. Witty, who has ably superintended the laying out of their new Belle Vue Park, to be Superintendent of the same.

— **THE ABERDARE COLLIERY CO.** have appointed Mr. J. Cowley to the management of their land and woods, in addition to the gardens at Abernant, which he has had charge of for about ten years.

— **MONS. MARTINET.**—It is reported that Mons. Martinet, the editor of "Le Jardin," a French horticultural journal, and a well known landscape gardener, has been nominated Chevalier of the Order of La Mérite Agricole.

— **GARDENING APPOINTMENT.**—Mr. William Hamilton, for the last nine and a half years gardener to Mrs. Grice, The Fields, Newport, Mon., and Beechwood, Reigate, Surrey, has been appointed gardener to Captain Hope, R.N., St. Mary's Isle, Kirkcudbright.

— **DEATH OF MR. JOSEPH RUST.**—We regret to announce the death of Mr. J. Rust, who died at Eridge on the 26th ult. Mr. Rust was born at Strachan, in Kincardineshire, on March 26th, 1826, and was apprenticed to Mr. Mundie, at Castle Fraser, but soon left Scotland to take a situation at Caen Wood, Highgate. Thence he went as foreman to Eridge Castle, near Tunbridge Wells, the seat of the Marquess of Abergavenny, which he left for a time, but returned in 1865.

— **PRESENTATION TO MR. PARKER AT IMPNEY.**—As we remarked a few weeks since, Mr. R. Parker, after a period of ten years, is retiring from his engagement at Impney Gardens. The staff employed there on Monday in last week showed their regard for him by the presentation of a handsome marble clock. An address, which accompanied the present, conveyed the warmest expressions of esteem, regret at his resignation, and good wishes for his future welfare. Mr. Parker has been appointed gardener to the Duke of Richmond and Gordon at Goodwood, Sussex.

— **DAPHNE CNEORUM MAJUS.**—No admirer of hardy flowers can be insensible to the beauty of the flowering trees and shrubs, and it was with pleasure that I read the article by "R. H. R." on page 314. Among others named in that interesting article was the above *Daphne* which I saw under name in the garden of Captain Stewart, Shambellie, Dumfries, lately. I had seen it occasionally before, but not under its varietal name. The typical *D. Cneorum* is in my garden, but the variety *majus* is distinct, being of erect, not trailing habit, and compact in growth. It is quite deserving of the commendation of your contributor, being, as he says, "of exceptional beauty."—S. ARNOTT.

— **ORNITHOGALUM NUTANS.**—In the very interesting article by "J. R. S. C.," pages 339 and 340 of last week's issue, the *Ornithogalum*, or Star of Bethlehem, was favourably mentioned and the species *nutans* compared to a "pensive cloistered nun." A lady who saw it in my garden once described its colouring as akin to moonlight, and I think the description so good that I mention it. In a well known work on flower gardening the *Ornithogalum*s of all varieties are not recommended for general planting, but the following varieties are specially excepted, and are so beautiful that it is surprising they are so little known—namely, *O. nutans* and *O. pyramidale*. *O. nutans* I have grown for many years, and it is so free growing and increases so rapidly that it requires more space than I have at command; its flower is beautiful both in the garden and also for house decoration, and the tints of the bells are so refined that they would please the most æsthetic amateur horticulturist.

— **DAFFODILS.**—"W. T.'s" (page 343) experience is that of the majority of my friends who grow these flowers. I have had gradually to move my bulbs from the neighbourhood of Rose plants, as the foliage interferes with dwarf Roses, and the manure necessary for Roses does not suit most Daffodils. I ascribe the cause of my Daffodils having flowered so badly to the fact of their having been left in the ground all last summer. With the intense drought then existing I believe it would have been better to have lifted them, and after a fortnight's exposure to the air to have replanted. The great heat of 1893 seems to have also had some bad influence on May-flowering Tulips, as I lost fully 500 of mine, some kind of decay having caused the bulbs to entirely disappear, large blank spaces existing in places where I had planted some hundreds. Those which I bought last autumn from Mr. Barr have flowered very well. I believe comparatively few persons know May-flowering Tulips well, but from their colouring and size of flower they deserve general cultivation, and more attention from all amateurs.—CHAS. J. GRAHAME.

— **SAVING POLYANTHUS SEED.**—In saving seeds of Polyanthus it is a good plan to select the flowers when the plants are nearly past, as crossing can then be more effectually carried out. Along with other good points the flowers having six petals should be chosen. The Hose-in-hose with the Jacks-in-the-green generally produce curious examples.—T.

— **EARLY BLOSSOMS IN STRAWBERRIES.**—We find Laxton's 1893 novelty, Number One, some ten days earlier to flower than any other in our large collection. The plants of 1893 look remarkably strong and healthy, but the older beds show the effect of the drought in giving less blossom than usual; on the other hand foliage is grand, and we expect a moderate crop of large handsome fruit.—GEO. BUNYARD & Co., Maidstone.

— **TULIPA KAUFMANNI.**—This rare and beautiful species has flowers as large as a large form of *T. Gesneriana*, measuring, when wide open, 7 inches in diameter. Its colour is creamy yellow, changing to white after it has been open three or four days. The unopened buds are prettily marked with a broad central line of red and blush feathering on the back of the petals. It is a distinct and evidently free-growing species. For its introduction, remarked Mr. Watson in a recent issue of the American "Garden and Forest," we are indebted to Dr. A. Regel, who found it in Turkestan in 1877. Dr. Baker says it is as variable in colour as *T. Gesneriana*, ranging through various shades of red and yellow to white.

— **RAILWAY GARDENING.**—Year by year may be seen in increasing number and variety a wonderful show of flowers, Ferns and shrubs at the little wayside station at Kingscote, near East Grinstead, on the London and Brighton Company's railway. Last year, says a daily contemporary, over 5000 potted plants were exhibited in rows, on stands, and on window-ledges, grouped with elegant rockeries and borders of Ferns and fronds. These are all from plants raised and cared for during the winter by the station master, Mr. Thomas Ward, who has been thirty-six years in the company's service. Many tourists alight at the station to examine the plants, and Mr. Ward is always pleased to act as cicerone to the appreciative strangers or neighbours.

— **ANOTHER MAGGOT.**—Mr. Hawkins, of Twickenham, told me the other day when I called at his nursery, of a maggot that at a particular period of the year gives a good deal of trouble to the Lilies of the Valley, and needs much watching. The best trap to catch the moths, which are of a pale colour, is to place a small lamp in the midst of a pan or bowl of water, on the surface of which is a little oil, and in that way the insects are readily caught; of course the lights need some top covering to prevent moisture falling on them. The huge beds of the splendid Victoria Lily grown by the firm in such admirable form show no evidence of maggot. The heat of last year, when ample waterings were given, gave the roots just those conditions they like, with the result that the leafage and spikes of bloom are finer than ever. Beds are replanted about every eight years, and of course some are re-made every year, then planted fairly thin, yet how dense they become in a year or two, and the produce in flowers becomes remarkable.—D.

— **A NEW FIELD FOR SEED AND BULB GROWING.**—A correspondent, writing to the "Garden and Forest," is of the opinion that California will be as well known, within a few years, for its bulbs and seeds as it now is for its fruits, as a large part of its flowers are Liliaceous, and no State in the Union has such a variety of flowers belonging to this family as California. Watson says: "The order (Liliaceæ) forms a marked feature in the flora of California," and the same authority gives 119 species, besides innumerable varieties, as being native to the State. This was in 1880; since then many new species have been found. The heavy adobe soil seems intended for bulb growing. He thinks this a promising field for some enterprising person. He has seen Tuberoses that were left in the ground by mistake, and when lifted, at the end of two years, over one dozen large-flowering bulbs were found for every one planted. They had been overgrown with weeds, and would have doubtless done much better with proper cultivation. Bermuda Lilies were left out in the same neglected spot and give like gratifying results. As there were several hundreds of each originally planted, the owner's negligence made a neat little sum. There are some vegetable seed farms (or ranches) at Santa Clara, and flower seeds are grown near Ventura. One grower raised last year, his first season, nearly 3 tons of Sweet Pea seed. This year he has 50 acres sown to them; 47 acres will be devoted to the seed alone.

— **GALEOPSIS DUBIA.**—Mention of the above in last week's *Journal of Horticulture* is not only interesting, but prompts us to take greater interest in wild flowers. When at Leadhills last season I observed along the headrig of a Turnip field, where I tented my bees, some beautiful shades of these flowers, from pure white to bright yellow, cerise, and mauve.—W. T.

— **GREEN-TINTED DAFFODILS.**—For some years past I have observed a changing of pure yellow Daffodils into green and green stripes. When at Crawford lately I saw many pure green ones. I took a sample with the intention of forwarding it to the meeting of the Royal Horticultural Society, placing it in water on the 20th. When examining it on the 23rd it appeared suffused too much with yellow to be of any interest, so returned it to the water. After it had stood a fortnight it was changed to a yellow.—T.

— **THE CUCKOO IN LONDON.**—Mr. Henry Bax writes from Lincoln's Inn Fields, May 6th:—"At 10.10 this morning I distinctly heard the repeated call of the cuckoo in the grounds of this neighbourhood. At first I thought it was some lads imitating the bird, but I soon distinguished it was the natural voice of the cuckoo; and I noticed people on the pavement stopped to listen to it. Is it not an unusual thing for this bird to be heard in the middle of London?" "J. A. C." also writes that he heard the cuckoo in the neighbourhood of Lincoln's Inn Fields about 10 o'clock."

— **DUNDEE HORTICULTURAL ASSOCIATION.**—The monthly meeting of this Association was held on Friday evening in last week, Mr. Robert Wilkie, the President, in the chair. A paper was read by Mr. John Stewart, F.B.S., Letham Mill, Arbroath, on "The Honey Bee." After referring to the order to which the insect belonged, he proceeded to give an instructive address on the physiology of the bee, and its mode of extracting and storing honey. The lecture was rendered all the more interesting by the aid of numerous diagrams, showing the anatomy of the insect in its various stages, the diagrams being lent by Mr. Brebner, Rector of the Harris Academy.

— **IMPORTED APPLES.**—We learn from some tables published in the last report of the Agricultural Department of Nova Scotia that "the total number of barrels of Apples imported into Britain during twelve years from the United States, was nearly 7,000,000. Canada furnished during the same period 2,170,000 barrels. From the States the largest number of barrels imported in any one year was 1,159,280 in 1880-81; the smallest number, 70,229 in 1883-4. Canada sent the largest number, 407,806 in 1891-2, and the smallest number 11,203 in 1883-4. Liverpool is the great Apple market, no fewer than 917,535 barrels being imported in 1891-92. In the same year 221,356 barrels were imported into London, 282,553 into Glasgow, and 25,892 into various other ports—the gross total for 1892-93 from the States and the Canadian provinces being 1,450,336 barrels."

— **CHRYSANTHEMUMS CORONARIUM PRINCESS MAY AND DUKE OF YORK.**—Of the many rare and beautiful flowers that were shown at the annual Exhibition of the Auricula Society, held on Saturday last in the Botanical Gardens, Old Trafford, Manchester, the above were two of the most beautiful. Several large bunches of cut flowers were exhibited by the raiser, Mr. H. Brownhill, Mayfield, and Broad Road Nurseries Sale. They attracted considerable attention, and were very much admired. They belong to the Coronarium or Crown Daisy section, and anyone who has not seen those new varieties could scarcely imagine how much superior they are to the old ones. Both varieties are single flowered. Princess May is white with a yellow disc, and Duke of York is a very bright clear yellow. The individual flowers of both kinds would average 3 inches in diameter; the petals are broad, and overlap each other so as to form perfectly circular flowers. In the old varieties the disc was the most prominent part of the flower, and appeared to be out of proportion to the petals; but in these new varieties it is not so noticeable owing to the increased length of the petals. They are very useful for supplying cut flowers, which keep fresh for a considerable time, and for the decoration of the flower garden. Plants raised from seed sown early in the season and planted outside in well prepared soil about 2 feet apart make large and handsome plants and flower most profusely. The type has been so well fixed by careful hybridising and selection that they can be depended upon to come true from seed. When a particularly choice variety is selected it may easily be retained by propagating it by means of cuttings in the autumn and wintering them in a cool house or pit, where they would be safe from frost.—W. NEILD, F.R.H.S.

— THE WEATHER IN SCOTLAND.—In South-east Forfarshire the weather has been of a very stormy nature for the past few days, with strong gales accompanied with snow and hail. On the morning of the 3rd the snow lay on the hills in Forfar, Fifeshire, till mid-day, and presented a very wintry appearance.—J. M. C.

— APRIL WEATHER IN HERTFORDSHIRE.—Mr. E. Wallis, The Gardens, Hamels Park, Buntingford, writes:—"The weather during the past month has been for the most part suitable alike for all gardening and farming operations. A good deal of bright sun and a fair amount of rainfall have been experienced, whilst frosts on the whole have not been excessive, except in low, wet places. I never remember seeing vegetation so forward. Rain has fallen on ten days during the month; maximum in any twenty-four hours was 0.45 inch on the 24th; minimum in any twenty-four hours was 0.01 on the 6th. Total rainfall during the month 1.42, against 0.11 of 1893."

— APRIL WEATHER IN STIRLINGSHIRE.—Mr. G. M'Dougall, Ravenna Cottage, Stirling, writes:—"The total rainfall for the last month was 1.787 inch, which fell on twenty days; greatest fall in one day, 0.264 inch on the 17th. Frost was recorded on three nights only. The highest maxima was 68.2° on the 28th; the highest minima 47.7° on the 29th. The lowest maxima was 47.3° on the 6th; the lowest minima 29.9° on the 1st. Mean maximum, 56.8°; mean minimum, 38.7°. A severe thunderstorm passed over this district on the afternoon of the 9th, when rain to the amount of 0.152 inch fell in about a quarter of an hour. On Friday morning last some of the higher Bens had received a fresh covering of snow."

— OLD TREES AT HAMPTON COURT.—The huge skeleton Oak referred to last week by a correspondent which he found in the Home Park at Hampton Court, is not the only fine vegetable ruin, for there are not far off some grand old Elm trunks that indicate great age, although it is probable that the Oak is the eldest and may have been planted 1000 years ago. It was so unfortunate a year or two ago to be set on fire, some boys having thoughtlessly collected some refuse and made a fire within its capacious trunk. Happily the fire was put out before much harm was done. It is only those patriarchs amongst trees which deserve our veneration as much as they excite our admiration. The Lime trees which form the grand avenues in the park are unhappily dying fast. It would be well to try the effects of hard beheading on one entire avenue just to see whether the new growth created would not also endow the dying trees with new life and vitality.—D.

— PLUMS.—One of the curiosities of the season is found less in the immense set of fruit on Plum trees than in the fact that some sorts, usually very shy, are fruiting freely. Whilst the drought and heat of last year made us to suffer in so many ways, in very many other ways are we reaping results of an unexpected kind. Thus in a large market orchard the other day I saw a number of old trees of Washington Plum that had, so said the grower, hardly borne a fruit since he planted them, and now they are carrying good crops. Of course there is the critical stoning period to pass through, but there is reason to hope that the fruits are safe. That we may have an immense Plum crop seems to be so probable that thinning may well take place early. Our market growers would perhaps object, as not paying, but these tremendous crops cripple trees for some two or three years, and thus we either have a Plum glut or no crop at all. We have much to learn yet ere we can hope to correct a form or habit of cropping that is so very unsatisfactory.—D.

— TECOPHILEA CYANOCROCUS.—"Suburban" writes: I have several times seen this beautiful plant, commonly called the Chilian Crocus, in flower during the past few weeks, and send you the following clipping from an American contemporary which recently came to hand:—"The Chilian Crocus is a charming little gem of the purest, deepest gentian blue. The flowers are borne on short scapes, and the six petals form an erect, partly spreading flower about 2 inches long, dark blue, with white markings at the base. Herr Leichtlin has, I believe, developed other forms with more white in the petals. It is difficult to see how the typical form could be improved. It is of a rare colour in flowers, and much easier than a Gentian to establish. T. cyanocrocus is not a recent introduction, but is still scarce enough to be classed among those bulbs with which growers do not care to try hazardous experiments, and hence its extent of hardiness is not fully known." According to my experience this beautiful bulbous plant is best grown in a pot in a cold frame or greenhouse.

— RHODODENDRON HÉLÈNE SCHIFFNER.—Messrs. W. Clibran and Sons send us a photograph of the new white-flowered hardy Rhododendron Hélène Schiffner, for which Mr. J. E. T. Seidel, Dresden, was awarded a first-class certificate by the Royal Horticultural Society last year; and observe:—"In our opinion it is by far the finest pure white hardy Rhododendron yet introduced. The trusses are of enormous size, globular in form, and of the purest white, without stain or marking, and with white filaments. The individual pips are of great size and extraordinary substance, and not of delicate texture, like the older white-flowered kinds. The plant is of compact and bushy habit with deep green foliage, and produces its flowers with remarkable freedom, each shoot being terminated with a head of flowers, the whole plant forming a dense pure white mass. The plants from which the photograph was taken were flowered in a cool house, and not forced rapidly. It is undoubtedly a valuable acquisition, and will be sought after by lovers of this useful and highly esteemed class of plants." [The photograph admirably represents the sturdiness and floriferousness of this beautiful Rhododendron.]

— EARL'S COURT EXHIBITION.—At one o'clock on Saturday last the Industrial Exhibition at Earl's Court was opened by the Right Hon. the Lord Mayor of London, who was accompanied by the Lady Mayoress and a number of friends. Mr. H. Percy Dodson, the Managing Director, met the party, and amongst those present were the Earl of Denbigh, Baron de Reuter, Lord Cheylesmore, His Grace the Archbishop of York, the Hon. Sir Charles Tupper, G.C.M.G., C.B., High Commissioner for Canada; Sir Charles Milo, K.C.M.G., C.B., Agent-General for the Cape of Good Hope; Sir Augustus Harris, and Sir Edward Hill, K.C.B., M.P. Horticulture as an industry is not so well represented as it was at the two previous Exhibitions, but still the skill of the gardener stands out pre-eminently. The under-cover garden has been re-constructed. In the centre there is a large fountain, made by Messrs. F. Rosher & Co., King's Road, Chelsea, and this through the summer will add a charm to the already beautiful display. The beds at present are planted with Palms, Rhododendrons, Fuchsias, Marguerites, Lilies, Spiræas, and Cinerarias, while a few are filled with Mignonette, which fills the air with a delightful fragrance. The grounds, too, are well laid out, there being numerous geometrical flower beds filled with various summer blooming plants. A large tent has been erected, and in this a series of flower shows will be held whilst the Exhibition remains open. On Saturday last Messrs. Barr & Son, Long Ditton, had this marquée to themselves, having arranged a magnificent display of Tulips and other hardy flowers. As on previous occasions, some greenhouses and horticultural sundries are to be seen in the Exhibition buildings, and as the summer advances it is probable that more will be forthcoming. Messrs. Ransome, Sims & Jefferies, Orwell Works, Ipswich, have a stand of lawn mowers, and Messrs. Sam Deards & Co., Harlow, exhibit greenhouses with appliances. Summer houses are shown by Mr. W. G. Riley of Herne Hill, and Messrs. Heathman & Son have a number of their useful ladders.

EARLY FLOWERING TREES AND SHRUBS.

ONE of the most beautiful of hardy flowering trees is *Amelanchier canadensis*. I believe its common name is the Snowy Mespilus, a very fitting one too, for when in flower it has the appearance of being loaded with snow, while the under side of its leaves appear to have hoar frost on them. Why this beautiful tree is not more often seen in pleasure grounds is difficult to understand; it cannot be on account of its being a "miffy" plant, for it will flourish in almost any soil or situation. It certainly does like a moderately light rich soil, and no doubt would be all the better for a somewhat sheltered situation, but neither of these are indispensable; therefore no one need hesitate about planting it. There is another species called *A. botryapium*, but this is not so showy or free flowering as *A. canadensis*. I think they look best as standards, but if grown as bushes they are very effective.

I might here mention two other most beautiful shrubs just now at their best—namely, *Pyrus Malus floribunda* and *Spiræa Thunbergi*, both of which are delightful but quite different in character. The former grows from 12 to 16 feet high, while the latter only reaches the height of 4 or 5 feet, therefore the latter provides a charming little shrub for edging the taller forms. What a number of beautiful and useful varieties there are in the *Spiræa* family. We are now enjoying the popular *S. japonica*, which is being forced together with the more recently introduced *S. astilboides*, which I think one of the very best, for it forces capitally. After the forced plants are over they are succeeded by those in the border, where they flourish in a most remarkable manner. Then we shall be having *S. aruncus*; this will be followed by the shrubby varieties, and so on till autumn, when many of them are charming with their beautiful foliage.—THOS. ARNOLD.



CŒLOGYNE MOSSIÆ.

A PLANT of this new and distinct Cœlogyne was exhibited by J. S. Moss, Esq., Winter's Hill, Bishops Waltham, Hants, at a meeting of the Royal Horticultural Society, on March 13th, on which occasion a first-class certificate was awarded for it. As will be seen by referring to the illustration (fig. 59), the flowers are borne in racemes. The sepals and petals are white, as is the lip, with the exception of a yellow margin in the throat. It is reported that this Cœlogyne was sent to Mr. Moss from the Neilgherry district of India in 1887. A plant flowered in 1890, but it has only recently been named.

CULTURAL NOTES ON ORCHIDS.

THE present is a very busy season for Orchid growers, a good deal of repotting and re-arranging being necessary. Insects, too, must be vigorously attacked at every possible occasion before the new growths are far advanced. Thrips, black and yellow, are very troublesome enemies, their marvellous fecundity and activity rendering them the most difficult pest the Orchid grower has to contend with. The black kind is the larger of the two, but the yellow is far more destructive. The latter is very partial to *Masdevallias*, the richly coloured flowers of *M. Harryana*, *M. Veitchi*, and others of that type being often marred by this insidious little foe.

If only a few insects are present they may be kept in check by sponging, and a little sulphur dusted about the young growths is also a deterrent. When, however, they are in strong force more drastic measures are needed, and nothing short of repeated fumigations will effectually subdue them. There are several preparations now advertised that are much safer in use and more effective for this purpose than tobacco paper, and a choice from these can easily be made. It is much better to fumigate twice or even three times in succession than to give one strong dose. The insects are more surely destroyed with less risk of injury to the plants. See that the foliage is dry before fumigating, and choose a calm evening for the operation. Ventilate and shade early the next morning, and after the last fumigating have each plant carefully cleaned as recently advised. Woodlice may be trapped in pieces of Potato, or better still in pots filled loosely with dry sphagnum moss, placed out of sight as much as possible, and examined daily.

Cattleyas and *Lælias* that flower in the summer and autumn on the current year's growth, as *Cattleyas aurea* and *Gaskelliana* and *Lælia grandis tenebrosa*, must be potted at once if not already done. *C. Mossiæ*, *C. Mendelli*, and others now flowering from the old pseudo-bulbs, must be seen to when the blossoms fade. *Dendrobiums* as they go out of flower should have attention, giving less room to such species as *D. Wardianum* and *D. Bensoniæ*, with small closely packed roots, than to stronger rooters, as *D. nobile* and *D. Brymerianum*. When there are strong plants of *D. nobile*, *D. Pierardi*, and similar species, and it is desired to increase the stock, young plants may be easily raised by cutting the pseudo-bulbs in convenient lengths and laying them in pans or boxes on sphagnum moss. Keep this constantly moist in a warm, shady position.

In arranging the plants for their season's growth give *Dendrobiums* the lightest and sunniest place as near to the glass as possible. When there are central and side stages use the former for large plants of such species as *Lælia purpurata*, *Cattleya bicolor*, *Cymbidiums Lowianum* and *giganteum*, *Aërides*, *Vandas*, or *Saccolabiums*. Smaller growing *Cattleyas*, *Cœlogyne*s, and the usual pseudo-bulbous section, such as *Oncidiums*, *Brassias*, and others, can be placed on the side stages. Shady corners may be occupied by *Bolleas* and *Warcewiczellas*, or if these are not grown *Cœlogyne cristata* and *Cypripediums*. *Angræcum sesquipedale* will flourish in a drier atmosphere than most Orchids if well supplied with water at the roots.

Odontoglossum houses having any but a north aspect will require some permanent shading, the ordinary blinds being insufficient to keep the temperature down in summer. This can be procured cheaply from dealers in horticultural sundries, or if a home-made article is desired stiff flour paste mixed with a little whiting and tinted green will be serviceable. This may be applied with an ordinary brush, and if gone over before it dries with an old painters' stippler or even a half worn sweeping brush, it will make the shading more even and improve the appearance. The flower spikes on *Odontoglossums* should not be retained long

enough to distress the plants. This they will do if left on until the blossoms fade, especially in a dry atmosphere, and shrivelled bulbs that start weakly will be the consequence. Three weeks are quite long enough to keep the spikes on the plants, and they will in many cases last for another fortnight if cut and placed in water.—H. R. R.

ORCHIDS AT CHELSEA.

AS on previous occasions Mr. W. Bull has now on view a fine display of Orchids at his nursery, King's Road, Chelsea, and the exhibition will be open until August. Last year there were many new, rare, and beautiful species in bloom at the time of our visit, but the display could not be placed on a parallel with the show this season. At the present time there are thousands of spikes of Orchid blooms, comprising many gems of this family; and in the course of a fortnight or so the hundreds of *Cattleyas* and *Lælias*, which are now developing flowers, will enhance the already striking effect with their richly coloured blooms.

The principal show house is a large span-roof structure, and the Orchids are arranged with Palms and other foliage as well as flowering plants. As already hinted the *Cattleyas* are not yet expanded in large numbers, but the flowers that are open stand out prominently amongst the rest. *C. Mossiæ Chelsoni* is a very fine form, and arrests attention by reason of its distinctiveness, the same applying to *C. Mendelli Alexandra*. The last named is a splendid flower of a delicate colour, which always commands admiration. *C. Mendelli superba*, too, is deserving of more than a passing notice, the flowers of this being unusually large and richly coloured. As a contrast to the latter *C. Mendelli Venus* may be noted, the blooms of this being of a charming light shade, with a beautifully crimped lip. Some magnificent forms of *Lælia purpurata* are developing blooms, one of the best being *L. purpurata gigantea purpurea*. The flowers of this are large and well coloured, the lip being purplish crimson. *Cymbidiums* are well represented, some huge plants of *C. Lowianum* producing a large number of racemes of flowers. A very distinct and rare form is *C. Lowianum eximium*, the petals of this kind having a purplish tint, showing up conspicuously against the flowers of the type.

Among *Cypripediums* the well-known *C. Chamberlainianum* is in excellent condition, and the charming *C. Exul* is flowering freely. A splendid form is *C. caudatum nigrum*, the petals of this variety being unusually dark coloured, hence its latter appellation. Of *Oncidiums* the beautiful *O. Marshallianum*, with huge spikes of its bright yellow flowers, made a charming display, plants of this species being arranged at each end of the structure, and in close proximity to large mirrors. The reflection in the glass adds a charm which visitors will readily realise. *Oncidium macranthum hastiferum* is very fine, and the same may be said of *O. Schlimi*. The scarlet *Odontoglossum Noezlianum* makes itself conspicuous by reason of its showy blooms, which can be easily discerned, even if rather less in size than many others. *Masdevallias*, too, are numerous, and some exceedingly choice *Trichophilias* are noticeable. Many more Orchids are in bloom in this structure, including some fine plants of *Thunia alba*, and the rare *Epidendrum Wallisi*, the whole, as before remarked, being most effective.

In another long span-roof house there is a magnificent display of *Odontoglossums*. There are about 500 spikes of bloom, these forming a miniature floral forest. Among them, too, are some exceptionally fine forms. *O. polyanthum* has large racemes of yellow flowers, while *O. Andersonianum* is remarkably good, the flowers being large and richly spotted. The popular *O. crispum* varies considerably, and amongst the scores of spikes are many bearing unusually fine flowers, with crisped edges and beautifully tinted petals. All are good, and it would be superfluous to individualise many, but mention should be made of *O. crispum purpureum*. A plant of *O. luteo-purpureum nobilis*, carrying seventeen flowers of an extraordinary size, attracted notice; and *O. triumphans* is represented in various forms. Hundreds of flowers on plants of *Miltonia vexillaria* are also expanding. Altogether Mr. Bull has this year eclipsed himself in the matter of providing an exhibition of choice Orchids, and admirers of these plants should pay a visit during the next few weeks to the well-known establishment at Chelsea.

ENGLISH TULIPS.

WHETHER the most brilliant of all the hardy flowers of early summer, the florists' Tulips, as raised chiefly and grown almost exclusively in this country, will become popular in the same sense as some other florists' flowers are is more than doubtful; but there is hope that their claims to attention will not be so completely ignored in the future as they have been in the comparatively recent past. These remarks apply more particularly to the southern parts

of England, for in the north there have always been a number of connoisseurs who have devoted great attention to and derived an extraordinary amount of pleasure from their Tulip beds and shows.

That a revival in public interest is being awakened in these brilliant, chaste, and refined flowers is apparent. Information respecting them is more generally sought for, and a demand for bulbs of approved varieties is springing up. Mr. Peter Barr, with his acute intuitiveness and boundless energy, is trying to meet the demand (or shall we say create it?) by increasing his supplies, and amateurs who have become fascinated by their flowers are influencing others in the same direction, while the once seldom-heard-of florists' Tulips are now recognised by the Royal Horticultural Society. True, the southern shows of these flowers have been small and exhibitors few; but cultivators may increase in number and exhibitions in magnitude, just as has been the case with Auriculas. Twenty years ago the whole of

art by the rich lustrous glow of colours—never called gaudy—in the famous stained glass windows in our grand old cathedrals. Just as these monuments of art, these beautiful combinations of richness with delicacy, and the lessons they teach, are by universal consent regarded as appropriate to the noble erections that contain them—so are the richest and most refined of Tulips worthy of the gardens they adorn, and of the fostering care of those who can admire the most beautiful blendings of Nature and Art—the elemental colours of the mysterious laboratory disposed and fixed by the intellect of man. Florists' Tulips are intellectual flowers, so are hosts of others; but few if any there are which embody so many long years of watchful care in aiding their development.

Tulip shows have done much to teach those who visit them wherein the beauty consists of the blooms that stir the souls of those who love because they understand them. But the lesson is only slowly learned by a mere inspection, and a master mind is needed, an



FIG. 59.—CŒLOGYNE MOSSIÆ.

the Auriculas exhibited in London could have been displayed on a moderate sized dining table, but now twenty such tables would not be adequate for their accommodation. The increase has been still greater in Carnations, and now Violas and Pansies appear to be making similar progress, while the dainty Pinks are no longer to be ignored. "Yes," it may be said, "but look at the difference between such flowers as those in chasteness and charm with the bold glowing Tulips." Are they bolder than Dahlias, Japanese Chrysanthemums, or Pæonies? yet have not these increased in favour? Then why not Tulips?

It is just a question of education. No one can become enthusiastic over these, in their way, incomparable flowers who does not understand them. It is only by knowing them, their points, properties, and wonderful characteristics that English Tulips can be fully appreciated. Then it is that the so-called gaudiness disappears, and is supplanted by brilliancy, and such translucency in colouration as can nowhere else be found in Nature, and is only approached in

expert floral teacher to demonstrate to others what is to him so clear, yet to them still vague and obscure. The writing of essays and the reading of papers may accomplish something, and in time, perhaps, a great deal; but more might be learnt in an hour from say the Rev. F. D. Horner in an explanatory discourse with typical flowers as illustrative than in a shoal of paper description. Possibly the time may come when an idea of this kind will be considered by authorities capable of carrying it out, that is if a desire exists in this direction. When such desire is apparent in reference to any section or aspect of gardening, the Royal Horticultural Society appears ready to give ear to it, and to do what is practicable in obtaining and dispensing instruction bearing on the advancement of knowledge in any department of the art over which it so worthily presides. It is clearly the desire of the Society to do this, and perhaps the time may come when it will afford through one of its expert coadjutors useful elucidatory object lessons on the merits and objects, the peculiarities and charms of florists' Tulips.

So long as public teaching of that nature is unavailable, those who need light on the subject must seek for it and find it in the best way they can. Undoubtedly one of the best private schools for instruction to be found is a Tulip bed, not a mere mass of flaming flowers such as may be seen in hundreds of gardens; but a genuine canvas-covered Tulip bed, planted on recognised cross lines of seven bulbs in a row, no more and no less, of bizarres, bybloemens, roses, and so on from end to end, every variety cherished for some precious possession, and of course all named. But not named in the bed—that would not be in order, perhaps it would reveal too much. The bed is for the plants and the book for the names. True the rows are numbered, or every fifth may be to facilitate convenience of reference to any particular flower; but if some accident should happen, and the numbers get displaced, nothing is lost but a little time, for every row is entered in the book, and every bulb in the row, so that each variety can be identified from the moment of planting to lifting. Then come the trays, the resting beds we may call them, in which every variety has its rest, its little square, and all numbered in turn. Tulip growing teaches exact methods, confusion would lead to a calamity almost, or at least involve tedious work in rectification.

But Tulip beds are not everywhere to be found. We may have to travel miles to see one. A hundred miles would be a short journey to the votary; but to the novice there is the freshness of novelty to repay him, and he discovers how much there is to learn, also what a fund of interest Tulips possess, and the extraordinary pleasure they give to their owners. The writer has now had four Tulip lessons, and is beginning to feel like one of the selfs that has been for years in the same dress—the breeder stage—and just beginning to “break” into the new life, like the butterfly from the chrysalis, only some of these chrysalid Tulips are superlatively charming, while deponent is exactly the reverse.

Four lessons in as many years, and the dates impart a lesson. The first visit was June 6th, 1891, the second June 3rd, 1892, the third April 29th, 1893, and the last May 5th, 1894. This at once indicates the relative earliness and lateness of the seasons, for Tulips are emphatically children of the sun, and come only at his bidding. Sometimes they come quickly too, and this brings into relief the element of uncertainty in fixing the date of the shows. This year's show at Westminster must be too late for southerners generally. The bed visited in Sussex (Dr. Hogg's) was waning last Saturday, the freshness having departed from most of the flowers; they were by no means equal to last year's form a week earlier in the season, and were in fact very much in the same condition as was the case a month later in 1891.

The Doctor has been adding to his collection somewhat, having procured some of the varieties, rectified and breeders, from the collection of the late Mr. Lloyd of Petersfield. The former are of great promise, not only by their colours and clearness but their sturdy vigour. There is nothing “miffy” about them, yet nothing lacking in refinement. As an instance of the deep rooted love Mr. Lloyd had for these flowers, this gentleman, when business urgently called him to Canada, chose his time so that he could take his collection with him, enjoy and watch the progress of the flowers from the breeder stage, and bring his precious bulbs home again. More than once they thus crossed the sea, and perhaps benefited by the change as denoted by the present constitution of the plants. A famous Manchester grower who benefits by a sojourn by the sea yearly, it is said, takes his Tulips with him in the hope that the change will do them good. And this said “Manchester man” thought nothing of rushing a few hundred miles to and fro on more than one occasion to inspect and obtain a share of Mr. Lloyd's much-prized varieties. When a really good collection of Tulips is in the market it would seem as if all the world of fanciers were after it, and the disposal can only be determined by amicable division, so strong is the desire for their possession. The outside world cannot understand this, simply because outsiders—the unlearned in Tulip attributes—do not understand what is to the cognoscenti the rarest gems in the floral world.

As there are always novices, and always will be, it may be well to tell those of them who care to know what one of the tribe has learned about breeder and rectified flowers in the different sections. The former are the first flowers from seed, and are yellow, rose or purple selfs. How long they will remain so no one knows. The breaking of the flowers, the darting up of the basal colour through the petals in flame or feathered form, is beyond guidance or control. There is no change of colours, but a marvellous distribution, and when once effected there is no return, no more than there is of the silvered locks of mature manhood reverting to the normal colour of youth.

But the self flowers, or “breeders,” differ in their hues. Some of the rose colours often deepen to pale crimson. The real crimson flowers become bizarres when they break, the yellow rays shooting

through the crimson. The rose-coloured flowers remain roses, and the purples become bybloemens, both having silver markings. Why? Because at the base of each rose and purple self is a clear disc of pure white. This must be bold, spotless, and well defined, like a burnished silver coin resting at the bottom of the cup. In the crimson selfs this basal disc is golden, and these discs impart something of themselves, yet without visible loss, to the body of the petals above, giving to them permanent marks of beauty. This clear basal field of purity, freedom from blotch or streak, is the “hall mark” of excellence in the florists' Tulip. Occasionally a self flower may almost approach crimson; yet if the base is white it will break into a flamed or feathered rose, if yellow into a bizarre.

For decorative purposes late Tulips of the section under notice are highly effective by their chaste or rich markings, even if defective in certain points as viewed from the florists' ideal. Mixed unnamed collections impart beauty to the garden, while affording opportunity for studying the flowers, and selecting those for special care which approach the most nearly to the standard of value. In this way the eye becomes educated, and in time small and more or less choice collections are formed to be cherished accordingly; but named varieties of high repute are not likely to become common, and they are consequently prized the more by those who are fortunate in possessing them. Still, some of the named varieties are sufficiently plentiful to be sold at prices the reverse of prohibitive, while they are as beautiful as some of the rarer sorts.

As many of the leading varieties were staged at Westminster, as will be seen by the report below, it must suffice that the names be mentioned in connection with the show; but judging by the Sussex collection southern blooms cannot be in anything like the best condition; it is therefore hoped that fresh and bright examples may be forthcoming from later districts of the country.

TULIP EXHIBITION AT WESTMINSTER.—MAY 8TH.

The number of Tulips brought together at the Drill Hall by the Royal National Tulip Society was greatly in excess of what was expected. The competition in some of the classes was remarkably close, but the judging took experts by surprise, and in more than one class the second prize stand should certainly have taken third place, and the third second, in the opinion of gentlemen who cannot be considered other than competent as well as absolutely unprejudiced judges. As will be seen by the subjoined prize list, the honours were taken mainly by northerners, their flowers being fresher than those belonging to the southern counties.

Mr. J. W. Bentley, Stakehill House, Castleton, Manchester, was accorded the first prize for twelve distinct rectified Tulips, two feathered and two flamed of each class. The bizarres included Sir Joseph Paxton (two), General Grant, and unnamed blooms; bybloemens, Ashmole's 126, Universe, Chancellor, and Bessie; roses, Annie Macgregor, Modesty, Mabel (two). The second prize went to Mr. Jas. Thurston, Cardiff, with small blooms lacking in substance and form. The third to Mr. C. W. Needham, with a stand of clean shapely flowers; Annie Macgregor (rose), Geo. Hayward (bizarre), Talisman (bybloemen), Lizzie (rose), and Sir Joseph Paxton (bizarre). Messrs. P. Barr & Son, King Street, Covent Garden, were fourth with small but well shaped and marked flowers, and Mr. J. Walker, Thame, fifth with larger blooms lacking finish.

For six distinct rectified Tulips Mr. J. W. Bentley was again first with bizarres Sir Joseph Paxton and John Mills; roses (two) Mabel; bybloemens Chancellor and Bessie. The peculiarity in the judging was noticeable in this as in the previous class, the same gentlemen occupying the respective positions of second, third, fourth, and fifth. In Mr. Needham's stand Annie Macgregor (rose), Sir Joseph Paxton (bizarre), and Juno (bybloemen), were particularly prominent.

Mr. C. W. Needham, was first for three flamed blooms, showing Sir Joseph Paxton (bizarre), Duchess of Sutherland (bybloemen), and Mabel (rose), each of the flowers, more especially the first and last named, being particularly good. Mr. J. W. Bentley was second with Ajax (bizarre), Friar Tuck (bybloemen), and Annie Macgregor (rose). Mr. J. Thurston, was third with three seedlings of fair form. Mr. Walker fourth; and Mr. G. Edom, Horeham Road, Sussex, fifth.

In the class for three feathered flowers Mr. J. W. Bentley was first with E. S. Smith (bizarre), Adonis (bybloemen), and Alice (rose), and Messrs. P. Barr & Son second with Charles X. (bizarre), Adonis (bybloemen), and Vicar of Radford (rose).

The first prize for six breeders, distinct, went to Mr. C. W. Needham with a charming exhibit, comprising Sir J. Paxton and Horner's Seedling (bizarres), Glory of Stakehill and Leach's No. 2 Seedling (bybloemens), and Madame de St. Arnaud and Mrs. Barlow (roses). The colouration in these flowers was of exceptional intensity, and the disc at the base was clearly defined in each bloom. The second prize was taken by Mr. J. W. Bentley with Horner's Seedling and Wm. Lea (bizarres), Adonis and Wm. Parkinson (bybloemens), and Miss Burdett Coutts and Rose Hill (roses). The blooms were good, the colours being pure and clearly defined. Mr. J. Thurston was third with six delicately coloured seedlings; Messrs. Barr & Son fourth with highly creditable blooms, and Mr. Geo. Edom, fair examples.

The Samuel Barlow prize for the best pair of rectified Tulips went to Mr. J. W. Bentley with Dr. Hardy and Leech's Seedling (bizarres), with flowers of a very high order of merit; Mr. C. W. Needham

second with Sir J. Paxton and Geo. Hayward (bizarres); and Mr. J. Thnrston third with Sir J. Paxton (bizarres) and a seedling bybloemen.

For a collection of florists' Tulips Mr. J. W. Bentley was placed first with a well diversified exhibit, containing some very fine forms; Mr. C. W. Needham, with a good selection, being a fine second.

Mr. J. Walker exhibited a large collection, not for competition, in which some fine flowers were noticed, including Geo. Hayward and Vivid (bizarres); Surpasse Colfuda, Lord Denman, Mrs. H. B. Stowe (bybloemens), and some seedling roses. Dr. Hogg also staged a collection not for competition, in which Mr. Gladstone, a bybloemen of splendid shape, substance, and colouration; George Hayward, bizarre, of exceptional size and richness; Gouden Ring, bizarre, remarkable for its almost black velvety ground and brilliant markings; George Hardwick, a good bybloemen; Mabel, rich rose; Talisman, a bybloemen breeder; Miss Burdett Coutts and Annie MacGregor, rose breeders, were amongst the best.

BUILDING A ROCKERY.

BUILDING or forming a rockery is probably the starting point from which geology is added to the manifold themes of a gardener's education. Unconsciously it may be, rays of light from a science hitherto regarded as extraneous to our business creep in, and eventually thought is brought to bear on a subject of interest. In the humblest type of rockery there are, as with other things, two ways of doing it—viz., the right way and the wrong way.

That rockery we have just completed does not quite come up to our ideal. We feel that all is not quite as it should be; the ingredients may be all right (they are not always so) but the formation is all wrong. Care has been taken that no foreign substances have crept in, for presumably not any gardener will use the recipe on which some town rockeries are concocted. In some of these "chanies of childhood" play a prominent part, and a mutilated stucco image fittingly crowns the glaring absurdity. These may be dismissed from thought. The time may come when county councils will by æsthetic education dismiss them from view. Professional rockwork builders are par excellence masters of the art. Some specimens are so perfect as to appear like Nature, unassisted and unadorned by the hand of man, for—

"In framing Artists, Art hath thus decreed,
To make some good, but others to exceed."

These have the deft hands we fain would possess, and perhaps might have could we have that "practice which makes perfect." Home-made things are not always the best made, but in many cases if not made in this way they are not made at all.

In a gardener's earnest endeavours to all-round improvement some unsightly nook or bare corner in the garden, grounds, or houses may, and often do, suggest something in the way of rockwork. With many of the lesser forms of hardy plants this plan can alone display their charms, which are lost on the level ground of the herbaceous border. By their surroundings is their beauty enhanced, provided those surroundings are imbued with that happy touch which blends Nature with Art. Mediocrity is not desirable, nor in fact to be tolerated in the garden; to this end there are things one would like to know in order to avoid, hence these few remarks emphasised by experience. My first attempts at rockwork building gave results—happy ones? No! I could at least point out to my friends the way not to do it. In the selection of materials we are not likely to err, for in the nearest quarry will be found what Nature has provided suitable to the locality. Here the question of labour and expense will keep us right, and obviate the incongruities of granite in a limestone district or *vice versa*. In the building is probably met the rock that wrecks us.

The silent teacher has laid down no hard and fast lines. We have infinite variety to select our patterns from, and it requires some discrimination in the selection of that method which is to express our idea of the beautiful, and adapt itself to the requirements of planting. Strata is of necessity the keystone of Nature's masonry, and must have that respect paid to it in the counterfeit presentment it rigidly demands. We then require crannies, clefts, and pockets (well filled pockets are in all cases satisfactory); perhaps owing to this they are apt to be overdone, and tend to make really good work puerile.

At the same time judicious planting can do a great deal to hide the builder's hand where it is too evident. That bond between Nature and Art we have to employ—viz., Portland cement, not only should be out of sight, but even the suspicion of that necessary evil is as well out of mind if possible. To accomplish this desirable object some tact, time, and trouble is needed from the amateur rockwork builder, but the subject deserves all consideration and some little forethought, these few remarks it is hoped may instil into the mind of a novice who aims at making his rockery a "thing of beauty and a joy for ever." Failure can teach as well as success. It is rather to the former than the latter, I am tempted to offer these thoughts on a subject "Rock-ribbed and ancient as the sun."—E. K., *Dublin*.

THE HAWKESYARD SPECIMEN PLANTS.

FOR over forty years the Hawkesyard collection of specimen stove and greenhouse plants have had a well earned celebrity in the midland districts, and for nearly thirty years the name of William Chapman has been closely associated with them as a well known practical cultivator and exhibitor. He went to Hawkesyard Park, near Rugeley, the

residence of the late Josiah Spode, Esq., in November, 1855, when the late Mr. William May was gardener there, and who was one of the famous brothers May, who were at one time at Ealing Park when Mrs. Lawrence's noted collection of plants was known throughout Europe. In the latter part of Mr. May's career at Hawkesyard the collection was considerably extended, and plants were exhibited at Chiswick, Regent's Park, the Crystal Palace, and Reading. At the time the Victoria regia was introduced a house was built specially for the cultivation of this, and a young plant was received from Chatsworth. This plant existed until 1862, when the tank was filled and the house devoted to the cultivation of *Ixoras* chiefly.

Mr. Chapman was for ten years the foreman under Mr. William May, and succeeded him, and has been head gardener there for quite twenty-eight years. Until very recently he attended as an exhibitor annually for twenty-six years at the Regent's Park, Crystal Palace, and South Kensington. His specimen plants were also seen at the Earl's Court Exhibition in 1892. In conversation with him as to flower shows in the past, he often referred with modest pride to his winning the first prize, £25, for twelve stove and greenhouse plants at the opening of the Royal Aquarium some years since. Mr. Ward, gardener to Mr. Wilkinson, Leyton, Essex, was second, and Mr. Tudgey third on that occasion.

Ixoras were always a speciality at Hawkesyard, and for many years past, about this period of the season, nearly eighty plants of various sizes, some of them grand specimens, were to be seen in bloom. On account of the decease of Mr. Spode not long since, the entire collection was sold by auction recently by Messrs. Pope & Son of Birmingham, several exhibitors from various parts purchasing. Seventy-seven specimen *Ixoras* of leading kinds were in the catalogue, besides specimen exhibition plants of *Azaleas*, *Crotons*, *Clerodendrons*, *Allamandas*, *Bougainvilleas*, *Medinilla magnifica*, *Stephanotis*, *Pancratiums*, *Anthuriums*, including a very large *A. Schertzerianum*, with from eighty to a hundred blooms upon it, which realised £10 10s. A number of specimen *Eucharis amazonica*, some forty-eight plants, realised good prices.

Hardwooded plants were objects of peculiar interest to Mr. Chapman, and some grand specimens were to be seen at Hawkesyard, such as *Statice profusa*, 5 feet through; *Leschenaultia biloba major*, several specimens of *Phoenocoma prolifera* Barnesi, averaging 3 feet in height and diameter, one specimen being 4½ feet each way; some fine *Eriostemons*, one realising £3 15s.; *Aphelaxis* in variety, 4 feet by 4 feet; some grand *Ericas*, one *E. profusa*, 3½ feet by 3½ feet, fetching £4 5s. There were also *Pimeleas*, *Genetyllis*, *Boronias*, *Epacris*, *Tremandras*, *Chorozemas*, *Acrophyllum venosum*, *Dracophyllum gracile*, and others; 310 lots of specimen plants were catalogued, and it is a source of great regret to me that such a fine collection had been broken up; for in viewing them my thoughts were carried back to old Chiswick and Regent's Park days, when Mrs. Lawrence, Messrs. Fraser, William Cole, Barnes, Green, Dodds, Peed, and others were great cultivators and exhibitors. In those days hardwooded plants were in the ascendant, and it would be a treat to some of us of the old school to see such *Gompholobiums*, *Pimeleas*, *Leschenaultias*, *Chorozemas*, *Boronias*, *Hovea*, *Celsi*, and *Adenandras* at present-day exhibitions.

There are still excellent cultivators about, and very fine specimens are met with. Mr. Cypher of Cheltenham takes first rank as a plant cultivator, and then there are Mr. Letts in the north, Mr. W. Finch of Coventry, and others who still show the young gardeners of the present day what specimen plants should be. One grand old plant grower, who made his mark a number of years since, is still spared to us—Mr. Thomas Baines, one of the very best of our older plant growers. Mr. John Fraser of Lea Bridge, too, is still amongst us; both, together with Mr. Chapman, are honoured representatives of the older school of plant growers.—W. D.

SYRINGING "MALMAISON" CARNATIONS.

THE practice of syringing set forth by Mr. H. Dunkin to check the spread of fungus will, I venture to predict, make the enemy far more distressing. If growers who are troubled with the disease place their plants nearer the glass, and expose them to more light and air, the disease will soon disappear. Admit air on all favourable occasions night and day, as anything approaching a damp confined atmosphere is very injurious to the plants. I am inclined to think this and the sodden state of the soil are points in the culture which frequently escape notice and cause many failures.—C. B. ELLIOTT, *Luxeville, Torquay*.

I ASSURE Mr. H. Dunkin (page 349), when I asked (page 327) if he really syringed the plants of "Malmaison" Carnations I had no wish to exalt myself, but simply to express my opinion that the new system of syringing is wrong, and non-syringing the right way. I am still of that opinion, unless fungus is on the plants, then they may be syringed once with, say, kilmright. I know some small growers who have their "Malmaison" Carnations very fine but never syringe; others buy clean plants every autumn, and have good houses, but still fail to keep the plants free from spot. Why? Because they syringe the plants. One of the largest trade growers for the flower markets writes complimenting me for my short article, saying, "I do not syringe my plants, and who ever does will soon have to take his plants to the stokehole." What is the experience of other gardeners who grow in bulk and those who grow them mixed with other greenhouse plants?—JAS. HAMILTON, *Byrkley, Burton-on-Trent*.



CODDLING CHRYSANTHEMUMS.

YOUR correspondent, Mr. H. Dunkin (page 340) draws attention to a cultural detail of very great importance in pointing out the advantages to be derived from placing the young plants of the Chrysanthemum in the open at the earliest moment practicable. My experience is that plants so treated gain a strength and hardiness of constitution which give to them an initial advantage for which no after treatment can supply a substitute. Of course no hard and fast date can be fixed, for seasons vary so very much.

The past winter proving so very mild, both in performance and promise, most of my plants were out of doors by the second week in March; but necessarily very substantial provision had to be made to give adequate protection in the event of frost. The result is that the plants are stronger and more "stocky" than I remember ever to have seen them before. I strongly recommend your readers to bear in mind the advice given by Mr. Dunkin.—CHARLES E. SHEA.

NATIONAL CHRYSANTHEMUM SOCIETY—PRESENTATION.

A SPECIAL general meeting of the members of this Society was held at Anderton's Hotel, Fleet Street, on Monday last, when Sir Edwin Saunders occupied the chair.

The Chairman, after a few introductory remarks concerning the reason for which the meeting was called, reminded those present of the able assistance that the late Vice-Chairman, Mr. E. C. Jukes, had rendered during his lengthy connection with the Society, extending over a period long prior to its assumption of the title of a National Society. He thought all present would testify to the kindly bearing, the ripe experience, and sound judgment which had distinguished that gentleman's management, and much as they would deplore his retirement they would feel some consolation that those qualities would be transferred to another and larger sphere of usefulness. It was pleasant to know his resignation was not caused through failing faculties or declining health, nor through any difficulty or disagreement with his colleagues. These the Chairman felt were great sources of consolation, for Mr. Jukes would still remain a member of the Society, feel an undiminished interest in its proceedings and in its successes, and contribute as heretofore to the shows. He would hope, too, that occasionally he would favour them with his presence. He felt Mr. Jukes could not be allowed to retire without some recognition for the valuable services he had rendered, and that it should take some permanent form which would remind him from time to time of the pleasant hours he had passed in the Society. It was also thought that this should not be the act of the Committee alone, but that of the Society, and hence this special meeting of the members had been called that they might concur in the presentation in the most hearty manner. Sir Edwin then handed the testimonial, a handsome illuminated work in vellum, to Mr. Jukes, which was as follows:—

"The National Chrysanthemum Society.—At the annual general meeting, held on February 19th, 1894, it was unanimously resolved that the best thanks of the members of the National Chrysanthemum Society be accorded to Edward C. Jukes, Esq., on his retirement from the office of Vice-Chairman of the General Committee, for the invaluable services which he has so long rendered to the Society as one of its principal Executive Officers.

"EDWIN SAUNDERS, *President*.

"JOSEPH R. STARLING, *Treasurer*.

"R. BALLANTINE, *Chairman*.

"B. WYNNE, *Vice-Chairman*.

"RICHARD DEAN, *Secretary*.

"C. HARMAN PAYNE, *Foreign Corresponding Secretary*."

Mr. Ballantine then spoke a few words of tribute to Mr. Jukes' many services, and expressed regret that local work of another character demanded his attention.

In an eloquent reply Mr. Jukes thanked the members very heartily for the kind words spoken which had been so enthusiastically received. He had spent many happy hours among them, made many friends and hoped no enemies. He attached great value to the honour of being elected their Vice-Chairman year after year. Mr. Jukes then traced the work of the Society from the time it became a National Society, and especially alluded to the way in which the late Mr. W. Holmes had laboured to advance its interests, and he felt that Mr. Holmes' deep interest and consequent labours for the N.C.S. had done much to hasten his premature end. Another member, the late Mr. Sanderson, had also contributed to build up the Society to its present high standing. But if they had had losses, he was thankful to think there were still good men and true to step into the ranks and do excellent work, and he felt the Society, no matter what it had been in the past, had a more successful future in store. He assured them he had not lost interest in the Society, and would always take the same keen interest in it, he would still exhibit, and trusted with a like success as heretofore, but that did

not rest alone with him. If ever he was tempted to forget his connection with the Society, the beautiful testimonial just received would prevent such forgetfulness, and he would be proud to hand it down to his children.

CANONS OF JUDGING.

At this juncture Sir Edwin Saunders retired from the chair, having another appointment, and Mr. Jukes occupied his place. In introducing Mr. Molyneux as the opener of the discussion on Mr. Shea's paper he referred to the most salient points, and the discussion, which was a very lengthy one, thereupon ensued. Mr. Molyneux agreed in the main with the suggestions made by Mr. Shea, but thought another attribute—form—should be added. For simplicity Mr. Molyneux would group diameter, depth, and solidity together, allowing 1½ point for the first two, and one point for the last, or 4 points in all; then form, finish and freshness 2 points, breadth of petal and colour 2 points, making a total of 8 points. He thought the discussion should be laid before a small committee of experts to elaborate details, for he was quite in harmony with what Mr. Shea had said if we can devise simplicity in the carrying out of his proposals.

Among numerous other members who addressed the meeting were Mr. H. J. Jones, Mr. Waterer, Mr. Ritchings, Mr. G. Gordon, Mr. Hicks, Mr. E. Beckett, Mr. Crane, Mr. Moorman, Mr. Bevan, and Mr. Hamill. Mr. Shea replied.

It was finally resolved upon the motion of Mr. Harman Payne, that the matter be referred to a sub-committee with the view of giving practical effect to Mr. Shea's paper.

The meeting was largely attended, there being many persons present who act in the capacity of judges, and votes of thanks to Mr. Molyneux and Mr. Shea brought the meeting to a close at a rather later hour than usual.

AUSTRALIAN GRAPES.

WITH the increase of facilities for cheaply exporting fresh fruit in sound condition from Australia to the Mother Country, Grapes from New South Wales may become as common as those from southern Europe in the British market. Only those who have visited the colony during the Grape season can form anything like an adequate idea of the abundance, luscious character, and cheapness of the fruit. Imagine the finest Muscatel Grapes retailed in a British fruiterer's shop at 3d. per lb., or rich Malaga Grapes hawked about the streets at 1d. per lb. Yet this is what many Sydney residents are familiar with. The greater portion of New South Wales is essentially a Grape growing country, the Vine being cultivated therein with as much ease as the Gooseberry bush in the English home counties, bearing large crops of succulent fruit, equal in size, appearance, and flavour to the finest Grapes produced in southern Europe.

The Vine was introduced into New South Wales in the early days of colonisation, but its systematic cultivation, principally for wine making purposes, dates from 1828, when an enterprising colonist, Mr. Busby, returned from Europe with a large collection of Vine cuttings from the most celebrated vineyards of France, Spain, the Rhine valley, and other parts of Continental Europe, and planted on his estate at Kirkton, in the Hunter River district, a vineyard which afterwards became the nursery of the principal vineyards of the colony. Subsequently the Vine was planted in the Murray valley and in other districts, and was found to flourish so luxuriantly that the manufacture of wine received considerable attention, developing, after numerous vicissitudes, into its present extensive proportions. In April, 1893, the area under Vine cultivation in New South Wales was 6357 acres, of which 2211 acres were devoted to table Grapes, the product during the year 1892-93 being 13,251,840 lbs., an average of about 13,440 lbs. per acre. The table Grapes are grown principally in the neighbourhood of Sydney, especially in districts of Ryde, Parramatta, and other portions of Central Cumberland.

In addition to the area mentioned there are 1907 acres not yet in bearing condition. Should the demand for table Grapes increase, the area under cultivation can be indefinitely extended, and the product increased by millions of pounds, thereby enabling them to be exported in considerable quantities at remunerative prices to both growers and retailers. Should steam communication between Manchester and Sydney become successfully established, the myriad populations of the great Lancashire industrial centres will enjoy the luxury of the finest qualities of Grapes from the Antipodes at almost nominal prices. This is no idle dream, but one of the possibilities of the near future. Of Grape cultivation for wine making purposes a good deal may be said, but it would occupy too much space.

Whether grown for table use or wine making, the Grapes are obtained almost exclusively from staked Vines, cut down every year to within a couple of feet from the ground, and planted in rows, the Vines being equidistant from each other. Trellised Vines—as, indeed, is trellised fruit of every description—are comparatively rare, and used principally for ornamental purposes. The scene during the vintage season, although not so picturesque as in France or Italy, is extremely interesting, all the available labour, including that of women and children, being called into active requisition. The Australian vineyards have suffered less, proportionately, from the ravages of the phylloxera than have those of Southern Europe, a result of the vigilance displayed by the various colonial Governments whenever the disease makes its appearance; hence

the abundance, fine quality, and general cheapness of the fruit, which, during the season, is found on the tables of the poorest, as well as on those of the richest colonists.—JOHN PLUMMER, *Sydney*.

OLEARIA STELLULARIA.

ALTHOUGH over eighty species of the genus *Olearia* are known to botanists, scarcely a dozen are found in gardens, and still less are generally valued for their ornamental characters. Two of the best known are *Olearia*, or *Eurybia*, *Gunniana*, and *O. Haasti*, both with abundant white flower heads of shrubby habit, and hardy in many districts, the former, from Tasmania, requiring protection in exposed positions, and being rather more tender than the New Zealand *O. Haasti*. When in flower these shrubs are exceedingly ornamental and form conspicuous objects on a rockery or in a border. *O. stellularia* is also effective when in flower, and a spray of this form, depicted in fig. 60, gives a good idea of its character. The flowers are starry in form, white, clustered towards the joints of the branches, the leaves small and closely set on the stems. The majority of the *Olearias* are natives of Australia, and the others are distributed through New Zealand and Tasmania.

LIVERPOOL NOTES.

LILY OF THE VALLEY AFTER FORCING.

I QUESTION if there is at the present time in the whole of the garden under my charge anything more useful, or which finds so many admirers, as two large beds of Lily of the Valley. The majority of the flowers are just beginning to open, some planted against the wall of a forcing house are developed. Valuable as they now are, nothing has been so little trouble to cultivate. Crowns which have been forced in pots, instead of being thrown away, are either stood in cold frames or in a sheltered position outdoors and carefully watered for a time until acclimatised, when they are utilised to make up the beds. The ground previous to planting is taken out a "graft" deep, a layer of rough sod and horse manure being placed at the bottom. On this the plants are laid, the same material being used to fill in between, a good watering completing the operation. During the summer all weeds are picked out, and a mulch of leaf mould given, the winter dressing consisting of a layer of horse manure. As the crowns push through in the spring a good soaking of liquid manure is given, healthy leaves and stout spikes testifying to the value of it.

GHENT AZALEAS.

How charming for spring decoration, either for cutting or adorning the pleasure grounds, are the many beautiful varieties of the Ghent Azalea, and how well they grow in the neighbourhood of Liverpool! Planted at the foot of a sloping lawn, and in close proximity to a small lake, the border resembling a bog bed, the plants are flowering splendidly, the moist condition seeming to suit them, for in no part of the shrubberies can I induce them to do so well. A shapely old *Rhododendron* of a scarlet colour, planted in the same bed, brightens up the white, pink, rose, yellow, and other shades of the Azaleas. From a walk on the other side of the lake the reflection in the water of the plants when in flower makes a charming picture.

CABBAGES.

In most gardens in the district there appears to be the one complaint of the premature bolting of Cabbages. It is strange when many varieties go this way that we invariably find *Ellam's* in good condition, this season being an exception, although the seeds were sown a little later than usual. From a pinch put in the second week in August I have some good plants, which will heart quickly now that we are having warm showers. In visiting a well known gardener in this neighbourhood I was shown a large number of plants which had all run to seed, whilst by the side this plantation were some very fine *Sutton's Earliest* ready for cutting. Asked if they had been sown at the same time I was informed that, taking the dry summer into consideration, he feared the first sowing would be too early, and so made a second one, the value of which is mentioned above.—R. P. R.

MARKET GARDENING.

THERE can be no doubt whatever that whilst there has been during the past winter and the present spring very much of dullness and almost of disaster in the market garden trade, yet does there seem to be but little inclination on the part of growers for market to break away from old methods, and to strive to forward to the consuming public garden products in a more tasteful and acceptable fashion. I compare Brussels Sprouts with Sprouting Broccoli, for instance. The former are now sent to market with some considerable attention to appearance, so that the tops of the baskets are faced off to look most attractive. Unfortunately, as all must admit, the bottom sample is rarely equal to that presented in the selected surfacing, and there is in consequence much disappointment. Still, Brussels Sprouts have sold very well all the winter, and have afforded little cause for complaint; but Sprouting Broccoli is cut by the head absolutely almost ere it has begun to

sprout, so that hardly one-third of the whole is edible. Even later, when Sprouts are fully developed the market product is one-half waste. That disgusts also; in fact there can be no greater folly than is found in sending to market material that is, after all, only inedible refuse.

The same is found in so much of our coarser Brassica produce. Then look at what may be seen in shops, where the chief portion is eventually sold. It is found lying about in heaps inside and outside, exposed to sun and wind; soon withering, or to use the common phrase "welting," toughening, losing all succulence and flavour. I have on a warm day rarely seen more pitiable defects than greengrocers' shops present, with all the produce suffering more or less, but usually very much so, and thus making the article as offensive and worthless in the estimation of the consumer as well can be. Then, again, look at the exorbitant prices these retailers charge for products. Goods that have been purchased at 1s. are offered for 3s.; in fact, nothing less than a profit of from 150 to 200 per cent. seems to satisfy the ordinary greengrocer. What wonder is it that in such case the consumption of what should be, and are when



FIG. 60.—OLEARIA STELLULARIA.

they come from the growers, sweet, wholesome vegetables, is extremely limited.

Practically, our enormous metropolitan population alone ought to consume fully four times more of garden produce than it does. There is need for a radical reform of our methods of sending products to market, and in that respect we must not be so obtuse as to refuse to learn from our foreign competitors. In myriads of cases foreign produce finds a sale, though perhaps no better or so fresh and good as our own, simply because more cleanly, neatly, and desirably packed and presented. This is an old story, but it is one that has to be constantly retailed, and it is to be feared will have to be so for many years. Then our greatest need is for better methods of distribution, so that consumers may be easily reached through the direct agency of the producer. Why should the middleman suck, as it were, the very life blood of the grower in one way and of the consumer in the other? We have no greater need than of numerous roomy covered cool public markets, where growers can meet the consumers and thus retail their own produce for the mutual benefit of both. Our existing market methods, most costly and incapable of meeting the needs of the vast population of to-day. There are few directions in which newly created public authorities can render better service than in the general creation of good public produce markets.—A. D.

ROYAL HORTICULTURAL SOCIETY.

MAY 8TH.

COMPARED with the previous meeting there was a comparatively small display on this occasion, and the attendance was not so good. Orchids were not very extensively staged, nor were greenhouse plants, hardy flowers constituting the bulk of the show. An Exhibition of Tulips was also held, under the auspices of the Royal National Tulip Society in conjunction with this meeting, and a report of which is given on page 366 of this issue.

FRUIT COMMITTEE.—Philip Crowley, Esq. (in the chair); Rev. W. Wilks, Dr. Hogg, and Messrs. H. J. Pearson, A. W. Sutton, J. Lee, Harrison Weir, G. Bunyard, G. W. Cummins, J. Cheal, G. Taher, T. J. Saltmarsh, A. Dean, A. J. Laing, W. Bates, T. Glen, J. Hudson, G. Wythes, H. Balderson, G. Sage, J. Smith, G. Reynolds, T. F. Rivers, and J. Wright.

Very few products were placed before the Committee on this occasion. Mr. S. Mortimer, Rowledge, Farnham, sent specimens of his new *Cucumber Progress*, the result of a cross between Matchless and Improved Telegraph. The fruits were perfectly straight and even, about 20 inches long, and dark in colour. This is a very handsome Cucumber of high quality, and certainly a more promising variety has never been submitted to the Committee. A first-class certificate was unanimously awarded. Mr. Vert, Audley End, sent half a dozen fruits of Vert's Favourite Cucumber, about 18 inches long. It is the result of a cross between Lord Kenyon's Favourite and Telegraph, good in colour, but rather long in the neck, no doubt a very useful variety; and the same may be said of Future Queen as exhibited by Messrs. H. Cannell & Sons, but no award was made.

Mr. Gilman, Ingestrie Gardens, sent a seedling *Melon Pride of Ingestrie*, the result of a cross between Colston Bassett and Syon House. Fruit round, light in colour, moderately netted; flesh white, juicy, sugary, and refreshing. An award of merit was recorded, with a request that another fruit be sent as the season advances.

Mr. Leach sent from Albury Park a dish of Ladybird Tomato—medium sized, smooth, well-coloured fruits; and a vote of thanks was accorded. Mr. Leach also sent plants of Chelsea Gem, Exonian, and Duke of Albany Peas from a November sowing. In the two former, seeds were forming in the pods, while the latter was commencing flowering. Chelsea Gem had the finer pods. Mr. R. Gilbert, High Park Gardens, Stamford, sent heads of Broccoli called Protector, a selection from Victoria. The heads were enveloped in leaves, very heavy, and sulphur coloured; they were regarded as good, but not markedly distinct, and, no award was made.

FLORAL COMMITTEE.—Mr. G. Paul (in the chair); Messrs. J. Fraser, J. Laing, C. T. Drury, H. B. May, H. Herbst, R. Dean, E. Molyneux, G. Stevens, C. T. Bause, W. C. Leach, J. Jennings, C. E. Pearson, H. Self-Leonard, J. D. Pawle, W. Bain, T. Godfrey, J. Walker, C. E. Shea, E. Beckett, H. J. Jones, G. Gordon, R. Owen, and Rev. H. H. D'Ombra.

Messrs. Sutton & Sons, Reading, sent a remarkably fine group of Calceolarias. The plants were exceptionally well flowered, and the blooms being large, rich, and diversified in colour, attracted attention. Cloth of Gold, a very fine yellow variety, was particularly good. A silver-gilt Flora medal was recommended for this superb contribution. Messrs. J. Cheal & Sons, Crawley, had a collection of hardy flowering and ornamental foliage trees and shrubs (silver Banksian medal). Messrs. T. Cripps & Sons, Tunbridge Wells, sent *Azalea rustica* flore pleno in variety (silver Banksian medal); and Messrs. W. Paul & Son, Waltham Cross, had a group of new Roses, including Medea, for which an award of merit was adjudged. Mr. T. S. Ware, Hale Farm Nurseries, Tottenham, showed a charming group of hardy flowers, comprising *Spiræa astilboides*, *S. palmata*, *Liliums* in variety, *Dielytra spectabilis*, *Phlox canadensis*, *P. setacea atropurpurea*, *Cytisus scoparia Andreana*, and *Saxifraga pyramidalis* (silver Flora medal). Messrs. J. Veitch and Sons, Royal Exotic Nursery, Chelsea, staged a charming collection of plants, including *Cytisus scoparia Andreana*, *Azaleas* in variety, *Rhododendron Hélène Schiffner*, *R. Julius Schame*, *Pæonia Reine Elizabeth*, *Veronica Hulkeana*, and *Cercis siliquastrum* (silver Flora medal). Mr. G. May, The Nurseries, Upper Edmonton, exhibited plants and blooms of *Carnation Uriah Pike* in splendid condition.

Messrs. Barr & Son, Long Ditton, Surrey, staged a splendid collection of hardy flowers, amongst which Irises and Tulips were exceedingly fine. The species of Tulips made a grand display, especially *T. Gesneriana majus*, *T. flava*, while the same applies to the numerous varieties of the florists' type. The best of the latter were Industry (rose breeder), Dr. Hardy (bizarre), Annie McGregor (rose breeder), Colbert (byb cemen; flamed), and Lord Derby (rose breeder). A silver-gilt Flora medal was recommended. Sir Trevor Lawrence, Bart., sent blooms of Lilacs, and secured a first-class certificate for a double white variety named Madame Lemoine. The same exhibitor also showed a plant of *Alströmeria Peregrina alba* (award of merit). T. R. Robinson, Esq., Blagdon House, Bristol, had blooms and plants of *Carnation Blagdon Surprise*, a fine white variety. Colonel Halford Thompson, Eastcliffe, Teignmouth, had a collection of greenhouse plants growing in Jaddo fibre in cardboard receptacles. Messrs. W. Cutbush & Sons, Highgate, sent a number of Moutan Pæonies, *Carnation Uriah Pike*, and hardy flowers (silver Banksian medal). Messrs. W. Balchin & Sons, Hassocks, Brighton, had a small group of *Boronia serrulata* and *Leschenaultia biloba major* (silver Banksian medal). Messrs. W. Paul & Son, Waltham Cross, staged a collection of Lilacs, and amongst them Madame Lemoine (first-class certificate), Géant des

Batailles (award of merit), and Souvenir de Louis Spath (first-class certificate), were very fine. Mr. W. C. Leach, gardener to the Duke of Northumberland, Albury Park, Guildford, sent a collection of flowering trees and shrubs.

Messrs. J. Veitch & Sons, Chelsea, had plants of *Phyllocactus Agatha* and *P. Niobe*, also a plant of *Gloxinera* × *Brilliant*, for which an award of merit was adjudged. This is described elsewhere. Mr. H. J. Jones, Ryecroft Nursery, Lewisham, had a group of *Pelargoniums*, and an award of merit was granted for Mrs. W. Wright. Messrs. H. Cannell & Sons, Swanley, sent Pæonies and Fuchsias, gaining an award of merit for *Fuchsia Princess May*. Messrs. J. Laing & Sons, Forest Hill, arranged a large group of Tuberous Begonias in excellent condition. An award of merit was granted for a double variety named Lord Milton (silver Flora medal). The Hon. W. W. Astor exhibited some fine specimens of *Lilium Harrisii* (silver Banksian medal).

ORCHID COMMITTEE.—H. J. Veitch, Esq. (in the chair); Messrs. J. O'Brien, De B. Crawshaw, J. T. Gabriel, H. J. Chapman, C. Pilcher, H. Ballantine, E. Hill, S. Courtauld, W. P. Protheroe, J. Douglas, C. J. Lucas, and T. B. Haywood.

Messrs. J. Veitch & Sons, Royal Exotic Nursery, Chelsea, sent a number of choice Orchids. These included *Disa* × *langleyensis* (award of merit). *Cypripedium macrochilum giganteum* (first-class certificate). *Masdevallia splendida* var. *parloseana*, and *M. x caudata Estradæ*. Baron Schröder, The Dell, Egham, staged a plant of *Dendrobium Dellense*, the result of a cross between *D. nobile Schröderiana* and *D. splendidissimum*. This is a beautiful hybrid with white petals and sepals, the tip of the lip being cream, and throat crimson purple (first-class certificate). From the same source came *D. nobile* var. *Schröderiana*, a charming variety (first-class certificate.) W. C. Walker, Esq., Percy Lodge, Winchmore Hill (gardener, Mr. G. Cragg), staged *C. Mendelli* var. *Morganiae*, and a well-flowered plant of *C. Lawrenceana*, for which a cultural commendation was granted. Some cut blooms of *Phaius Wheatmanianæ*, *Dendrobium Dalhousianum*, and other Orchids, came from Mr. Henry Wheatman, The Hawthorns, Little Raywood, Stafford. Messrs. W. L. Lewis & Co., Southgate, secured botanical certificates for *Bifrenaria* (*Lycaste*) *inodora* and *Microstylis Scotti*. Welbore S. Ellis, Esq., Hazelbourne, Dorking, gained an award of merit for a good form of *Odontoglossum Pescatorei*, which is described below. Messrs. T. Cripps and Sons, Tunbridge Wells, had a small group, including *Cypripedium caudatum* and *Dendrobium Deari*.

Messrs. B. S. Williams & Sons, Upper Holloway, staged a large specimen of *Cochlostema Jacobiana* with other plants. Messrs. Charlesworth, Shuttleworth & Co., secured an award of merit for *Odontoglossum crispum Heatonense*. De B. Crawshaw, Esq., Rosefield, Sevenoaks, gained a similar honour for *O. triumphans* Lionel Crawshaw, and a first-class certificate for *Vanda suavis*, Rosefield variety. Both of these are described elsewhere. Sir Trevor Lawrence, Bart., Burford, Dorking, sent a number of Orchids, including *Dendrobium cretaceum* (award of merit), and some fine forms of *Lælia purpurata*. Several cut blooms of various Orchids were sent from the Royal Botanic Gardens, Glasnevin, Dublin, and an award of merit was adjudged for *Coryanthe Wolfiana*.

CERTIFICATES AND AWARDS OF MERIT.

Alströmeria Peregrina alba (Sir Trevor Lawrence, Bart.).—An attractive plant with large white flowers, some petals of which were tinted green. The plant exhibited was growing in a pot, for which purpose it is apparently well adapted (award of merit).

Aquilegia Stuarti (Sir Trevor Lawrence).—This is a charming species, with large rich blue and white flowers (award of merit).

Begonia Lord Milton (J. Laing & Sons).—A fine double variety with brightly coloured flowers (award of merit).

Capensis, species? (F. W. Moore).—The blooms of this unnamed species were cut from a plant grown unprotected in the open ground. The flowers exhibited were large, white, with dark crimson bands (award of merit).

Coryanthes Wolfiana (F. W. Moore).—A curious flower of a uniform brown colour, spotted chocolate (award of merit).

Cypripedium macrochilum giganteum (J. Veitch & Sons).—This is one of the finest *Cypripediums* in cultivation. It is the result of a cross between *C. caudatum Lindeni* and *C. x grande*. The sepals are long and pointed, yellowish green veined brown. The petals are very long and tail like, while the lip is large and pale brown, inside cream (first-class certificate).

Dendrobium Dellense (Baron Schröder).—A splendid hybrid, the result of a cross between *D. nobile Schröderiana* and *D. splendidissimum*. The sepals and petals are white faintly tipped violet. The margin and the lip is cream coloured, the throat being crimson purple (first-class certificate).

Dendrobium nobile var. *Schröderiana* (Baron Schröder).—This is a beautiful variety, similar to the hybrid described in the preceding paragraph as regards colour, but the flowers are not quite so fine (first-class certificate).

Disa x langleyensis (J. Veitch & Sons).—The parents of this hybrid are *D. tripetaloides* and *D. racemosa*. The flowers are rather small, but attractive, being bright rosy pink, and are borne on tall, slender spikes (award of merit).

Dendrobium cretaceum (Sir Trevor Lawrence).—The flowers of this species have narrow white sepals and petals; the lip also is white, veined crimson (award of merit).

Dracæna De Smetiana (B. S. Williams & Son).—A useful decorative kind. The leaves when matured are green, margined red, the young foliage being cream coloured, tinted pink (award of merit).

Fuchsia Princess May (H. Cannell & Sons).—This variety has blush pink sepals and a rosy cerise corolla (award of merit).

Gloxinera × *Brilliant* (J. Veitch & Sons).—This is a bigeneric hybrid between *Gloxinia Radiance* and *Gesnera* × *pyramidalis*. The flowers are of a drooping character and bright crimson in colour. The foliage is dark green, similar in shape to that of a *Gloxinia* (award of merit).

Odontoglossum Peseatorei var. (Welbore S. Ellis).—This is a beautiful variety, the flowers being large and well coloured. The sepals and petals are white, suffused light purple, the latter being spotted crimson. The throat is rich yellow, reddish brown (award of merit).

Odontoglossum triumphans, *Lionel Crawshay* (De B. Crawshay).—A fine variety with large flowers. The sepals and petals are yellow tinted green, covered with pale brown blotches (award of merit).

Odontoglossum crispum Heatonense (Charlesworth, Shuttleworth and Co.)—A charming variety with medium-sized flowers. The sepals and petals are white suffused pink, spotted brown, the lip in the centre being lemon yellow (award of merit).

Pelargonium Mrs. W. Wright (H. J. Jones).—A beautiful *Pelargonium* with large blush pink flowers blotched dark crimson (award of merit).

Pieris formosa (F. W. Moore, Botanic Gardens, Glasnevin).—A useful flowering shrub with white blooms (award of merit).

Rhododendron Purity (B. S. Williams & Son).—A large single white variety (award of merit).

Rose Medea (W. Paul & Son).—A Tea variety with well-shaped delicate yellow flowers (award of merit).

Syringa Madame Lemoine (Sir Trevor Lawrence and W. Paul and Son).—A beautiful double white Lilac. The individual flowers are large, as are the sprays, and sweetly scented (first-class certificate).

Syringa pyramidalis (Sir Trevor Lawrence).—A robust growing semi-double kind, the flowers pale purple (award of merit).

Syringa Souvenir de Louis Spath (W. Paul & Son and Anthony Waterer).—A magnificent dark Lilac, with large flowers of a rich purplish shade (first-class certificate).

Syringa Géant des Batailles (W. Paul & Son).—A fine variety, with attractive rosy pink flowers (award of merit).

Vanda suavis, *Rosefield variety* (De B. Crawshay).—A splendid form of this well-known Orchid. The spray exhibited bore twelve flowers, which were exceptionally well coloured (first-class certificate).

CRYSTAL PALACE SHOW.

MAY 9TH AND 10TH.

THE annual summer Show, under the auspices of the Crystal Palace Co., was held on the above dates, and was in every way a success. Though perhaps the competitors were, on the whole, slightly fewer in number than has been the case in previous years, the quality was so good that the difficulty of awarding the prizes was greater than usual. The arrangements reflected great credit on the managers, and Mr. Head, the Superintendent. We append the names of the prizewinners in the principal classes.

The first prize in the class for twelve stove and greenhouse plants was accorded to Mr. A. Offer, The Gardens, Handcross Park, Crawley, for a handsome exhibit, including *Azalea Roi de Holland*, *A. Duc de Nassau*, *A. Baronne de Vriere*, *Boronia heterophylla*, and *Clivia miniata splendens*, exceptionally good. The second prize went to Mr. James, Castle Nursery, Norwood, *Azalea Roi de Holland*, *Epacris miniata splendens*, and *Erica affinis* being amongst the best; and the third to Mr. J. Mould, Pewsey Nur-ery, Wilts, *Erica Cavendishi* and *Pimelea spectabilis* being the best plants in the exhibit. Mr. Offer was also first for nine foliage plants with *Crotons angustifolius Princeps* and *Prince of Wales*, *Alocasia Thibautiana*, *Anthurium magnificum*, *Cycas circinalis*, *Encephalartos Altensteini*, *Nephtytis picturatus*, and *Corludovica elegans* in splendid form. Mr. W. Finch, gardener to J. Marriott, Esq., Queen's Road, Coventry, was placed second, and Mr. James third, each with fair plants. For nine *Crotons* Mr. Offer was again first with clean, well-grown plants; *Disraeli*, *Aureo-punctatus*, *Chelsoni*, and *Sunset* were particularly prominent. Mr. Wm. Howe, gardener to H. Tate, Esq., Park Hill, Streatham Common, was second; and Mr. James a good third.

The competition in the class for twelve *Dracenas* was very close between Mr. J. Lambert, gardener to W. Segelcke, Esq., Herne Hill, and Mr. Howc, the first and second prizes being eventually awarded in the order of their names. Mr. Offer was a fair third. Mr. Charles Turner, The Royal Nurseries, Slough, was placed first for nine show *Pelargoniums*, staging *Marguerite*, *Edward Perkins*, *Mystery*, *Spotted Beauty*, *Lady Isabel*, *Magpie*, *Prince Leopold*, *Statesman*, and *Joe* in excellent form; and Mr. J. Odell, Gould's Green, Hillingdon, was second with highly creditable plants. Mr. Turner was again first with nine fancy *Pelargoniums*, showing *Thomas King*, *Princess Teck*, *The Shah*, *Ambassador*, *Fanny Gair*, *Mrs. Hart*, *Roi des Fantaisies*, *Lady Carrington*, and *Ellen Beck*; Mr. Odell again taking second position. For twelve double Tuberous *Begonias* Mr. T. S. Ware, Hale Farm Nurseries, Tottenham, was the only competitor in this class, and was awarded the first prize, as also was he in the class for twelve single *Begonias*. The same exhibitor arranged a handsome collection in the class for hardy herbaceous, bulbous, and alpine plants, and was a good first. *Phlox canadensis*, *Saxifraga pyramidalis*, *Tulipa viridiflora*, *Paeonia tenuifolia latifolia*, and *Polemonium Richardsoni* being especially noticeable.

Messrs. Paul & Son, Old Nurseries, Cheshunt, were second with a charming stand.

Mr. Turner was first for eighteen greenhouse *Azaleas* with splendidly flowered examples of *Flora*, *Charmer*, *Vervaneana*, *Theodor Riemers*, *Eugène Mazel*, and others. Mr. R. Wells, Longton Nursery, Sydenham, was a good second. Mr. Chas. Turner was first for eighteen *Roses* in pots, exhibiting *Duke of Edinburgh*, *La France*, *Céline Forestier*, *Madame J. Laing*, *Juno*, *Turner's Crimson Rambler*, and *Violet Bouyer* in good form. Mr. Wm. Rumsey, Joynings Nurseries, Waltham Cross, was second with well grown and flowered plants. Mr. Offer staged handsome stove and greenhouse *Ferns*, and was deservedly placed first. Amongst the best were *Cibotium Schiedii*, *Davallia polyantha*, *Alsophila australis*, and *Nephrolepis davallioides furcans*. Mr. W. Howe was a good second, Mr. H. James being a fair third.

Messrs. J. Laing & Sons, Forest Hill, arranged a magnificent group of *Caladiums*, the plants being exceptionally well grown and clean. They were the only competitors in the class, and were accorded the premier award. *Candidum*, *Triomphe de Comte*, *Rose Laing*, *Salvator Rosa*, *Ornatum*, *Madame Groult*, *Leopold Robert*, *Clio*, *Paul Veronese*, and *Lymington* were particularly prominent. Messrs. Laing were also first for a group of foliage and flowering plants with one of their customary superb arrangements. Flowering plants were utilised in great numbers, but so well, that there was still an abundance of light and grace. *Begonias*, *Crotons*, *Palms*, *Ferns*, *Orchids*, *Cytisus scoparius Andreanus*, were all in splendid condition. Mr. W. Finch was second with a graceful group, and Mr. H. James third with an arrangement comprising far too many flowering plants. For nine greenhouse *Azaleas* Mr. Turner was a good first with *Roi de Holland*, *Duc de Nassau*, *Appolon*, *Jean Vervaene*, *Reine des Pays Bas*, *Bijou de Paris*, *Charmer*, and *Madeleine*. Mr. A. Offer was a good second, and Mr. H. James third.

The first prize for nine *Palms* went to Mr. A. Offer, the second to Mr. W. Finch, and the third to Mr. H. James. Mr. J. Portbury, gardener to W. N. Froy, Esq., Ripon House, Putney Heath, was first for twelve table plants, Mr. Lane, gardener to E. H. Cole, Esq., Caterham, second, and Mr. Macgregor, gardener to the Dowager Lady Hay, Putney Hill, third.

Cut flowers were staged in large numbers and were of excellent quality. The table decorations, bouquets, sprays and vases formed one of the best features of the exhibition. Not only were the flowers and foliage arranged with exquisite taste, but they were of excellent quality. This was particularly noticeable in the table decorations, which were models of lightness and grace.

As is usual at all the shows held at the Crystal Palace, the miscellaneous exhibits were numerous and of good quality. One of the most prominent of these was the *Roses*, both cut and in pots, staged by Messrs. W. Paul & Son, Waltham Cross, in which some splendid blooms were noticeable. The plants in pots, too, denoted high culture, and were carrying healthy foliage and clearly coloured flowers. Mr. Wm. Rumsey, Joynings Nurseries, Waltham Cross, also staged some superb *Roses*, which were highly creditable to the grower. Messrs. Wm. Cutbush & Sons, The Nurseries, Highgate, exhibited a group of foliage and flowering plants, in which *Orchids*, *Ericas*, *Mignonette*, *Palms*, *Ferns*, and admirably flowered *Azaleas* were particularly prominent. The same firm also staged a well diversified collection of hardy flowers, as also did Messrs. J. Laing & Sons, Stanstead Park Nurseries, Forest Hill, S.E. The latter firm also arranged a stand of foliage and flowering plants, including *Caladiums*, *Ferns*, *Dracenas*, *Crotons*, *Variegated Tobacco* and *Begonias*. For different varieties of the latter it may be noted Messrs. Laing were accorded five certificates. Mr. G. May, Upper Teddington, showed blooms and plants of *Clove Carnation Uriah Pike*, as also did Mr. Jas. Pike, Acton, W. Splendidly grown and flowered plants of *Leschenaultia bioba major* were exhibited by Messrs. W. Balchin & Son, Hassocks Nurseries, Sussex, and Mr. Leakey, gardener to — Douglas, Esq., Upper Norwood, some well grown *Gloxinias*.



HARDY FRUIT GARDEN.

Strawberries.—*Feeding.*—The copious rains have moistened the soil to a considerable depth, and the roots of well established plants may be safely nourished by occasional applications of liquid manure to the soil. The display of strong flower trusses and rapidly expanding blooms promise an abundant crop of fruit, which will need sustenance in the soil to draw upon during development. In the present moist condition of the ground food applied in liquid form will be retained for some time, providing a store of nutriment ready to hand. Light applications of chemical manure are also of considerable assistance applied now and hoed in around the plants. Soot, too, worked in in dry weather or left to wash in during showery periods is of great service. Make the soil black when applying it.

Mulching.—Pull out strong weeds and hoe down small ones, the operation of loosening the soil greatly benefiting the plants, especially young ones. Beds in full bearing ought now or soon to be mulched

with moderately short and partly fresh stable manure. The short and solid parts act beneficially in assisting the plants, rain or waterings washing down the virtues of the manure to the roots. The strawy and lightest portions act chiefly as conservers of moisture, and provide a clean bed for the ripe fruit to rest on, also preventing the soil being trampled unduly hard in damp, and cracking in dry weather. Spring planted Strawberries may receive similar assistance in the shape of a light mulching for preventing the too rapid evaporation of moisture, free growth being promoted in poor or light soils at the same time by the gentle stimulating aid thus given. No weak Strawberry plants ought to be allowed to fruit the first year, as this greatly impedes their progress and prevents a full crop the following year.

Training Young Fruit Trees.—The work of regulating the shoots, especially of wall trees, whether trained in formal shapes or spreading in fan form, should be proceeded with as they extend in length. Some amount of disbudding greatly assists the work of training if the shoots not required are rubbed off in time, but a wholesale removal is not desirable. When so treated great risk is run in checking growth and destroying a proper balance between root and branch. If trees are discovered where the necessary amount of shortening for forming the framework of their shape was neglected at the winter pruning, or in spring by the time the buds pushed, and it is now seen that shoots are required to furnish space lower down, the upper branches may be gradually disbudded to the point desired. The bare portions of wood left may afterwards be safely cut away when the foliage on the shoots retained has developed.

General Disbudding.—This operation may advantageously be carried on where clusters of young wood are most thickly placed or situated in unsuitable positions. Much useless growth is often made from dormant buds in different parts. Frequently such growths are very strong and vigorous, and when not too gross in nature they offer facilities for refurnishing fan-shaped trees with better wood, gradually cutting the old away. Very gross shoots, however, should not be preserved, but rubbed or cut off when young and sappy. The rear part and the under sides of the branches of wall trees are the least desirable positions it is necessary to encourage growth from, and these removals ought first to be effected at short intervals. In dealing with the better placed shoots first thin out moderately, then determine those to be ultimately retained, by degrees removing the others. Fan-trained trees, consisting chiefly of stone fruits, must have shoots trained principally from the upper sides. There is less danger of overcrowding and more light and air secured.

Destroying Insects.—Aphides are liable to infest the points of the young shoots of Peaches, Nectarines, Plums, and Cherries, more or less when the weather is hot and dry, the leaves curling and becoming unhealthy in consequence. There are various causes which conduce to these attacks, the principal being lack of moisture at the roots, a crowded unhealthy condition of the wood, and general neglect in practising good culture, which throws trees into an enfeebled state. Green and black fly may be kept in check by regularly syringing in warm weather, this also promoting the general health of the trees. Occasionally a little softsoap may be dissolved in the water, but when colonies of aphides have clustered on the points of branches nothing short of a strong insecticide will kill and banish them. A solution of softsoap, 2 ozs. to the gallon of water, adding a pint of tobacco juice, is a safe and reliable remedy. The points of young shoots are usually affected the worst. Dipping is the readiest means of reaching the insects, using a deep narrow vessel in which the shoots may be immersed in the solution, and while there gently rubbed to displace the insects. A syringing with clean water the next day will, in most cases, serve to cleanse the trees.

Feeding Pear Trees.—The majority of Pear trees have now set their fruits, and dwarf-trained pyramids, cordons, and bush trees may receive a good syringing to clear away the unfertilised flowers, showing to what extent young fruits are developing. The moist condition of the soil at the present time offers a favourable opportunity to assist the swelling of the small fruits by applications of liquid manure. If this cannot be applied the next best thing is to mulch the soil over the roots with a coating of rich manure, or give a dressing of some approved chemical manure. A few soakings of water will then carry much nutriment down to the roots. The mulch prevents moisture being withdrawn rapidly by the hot sun, an important matter in the case of trees grown on dwarfing stocks, which are naturally surface-rooting.

FRUIT FORCING.

Pines.—Plants with fruit in an advanced condition require a moderately high and moist atmosphere. This condition renders them more susceptible of injury from changeable weather, the effects of sudden outbursts of sun telling disastrously, especially upon the crown, which is not unfrequently scorched if the ventilation is not carefully attended to. Watering must be seen to once a week, but avoid indiscriminate periodical watering. Plants that have heat at the roots by means of hot-water pipes need more water than those having the bottom heat supplied by means of fermenting materials. Both should have water as often as required, on every occasion employing some stimulant of an all-round nature, or dissolved chemical manure or guano, 1 lb. to 20 gallons of water. Admit air at the top of the house at 80°, and maintain the temperature during the day at 80° to 90°, closing at 85°, but unless it be desirable to enlarge the crowns do not quite close the house. Fire heat must be employed to prevent the temperature falling below 70° at night, and to raise it to 75° in the day, the bottom heat being kept

steady at 80° to 90°, then a few degrees variation in the atmosphere is not of great consequence. Syringe the house and plants two or three times a week according to the weather, and otherwise maintain the atmosphere in such condition as is likely to secure the perfect development of the fruit.

Peaches and Nectarines.—*Houses Started at the New Year.*—The fruit is about completing the stoning process, but it must not be subjected to a higher temperature than 60° to 65° by artificial means, commencing to ventilate at 65°, and not allowing 75° to be exceeded without full ventilation. If the fruits are too thick remove the smallest, allowing one fruit to each square foot of trellis covered with foliage, leaving them a little closer on strong wood, and less on the weaker. By apportioning the crop to the vigour or parts of a tree the evenness of the growths may be maintained. Tie the shoots as they advance, removing superfluous growths, as it is important no more be retained than can have exposure to light and air. Draw the leaves aside or even shorten them, so as expose the fruit to light, raising such as require it on thin laths placed across the wires of the trellis with their apexes to the sun. After stoning maintain a good moisture in the house, and water the inside border copiously, which in well drained borders will be required once a week, mulching the surface with about an inch thickness of short, rather lumpy manure. If the fruit is not required ripe as soon as practicable, continue 60° to 65° as the night temperature, 65° artificially by day in dull weather, 70° to 75° with sun heat, closing at the latter with plenty of atmospheric moisture. In a high temperature 70° to 75° by artificial means, 80° to 85° or 90° from sun heat, and moist atmosphere, Peaches swell to a great size after stoning, but they are not usually so high coloured nor so well flavoured as those ripened in less heat and moisture and with free ventilation.

Houses Started Early in February.—The fruit, being in the early stages of stoning, should be reduced to two on strong shoots and one on the weaker, not leaving too many, for there is danger of their not stoning in that case, while they will be small if they should stone. Retain in all cases the fruit best situated for receiving air and light. Thin the shoots where crowded, pinching laterals to one leaf, and secure the growths to the trellis as they advance. Syringe the trees twice a day in bright weather, but once only in dull, and not then if the foliage does not become dry before nightfall, or it is found dripping with moisture in the morning. The temperature by artificial means may be kept at 55° to 60° at night, and 60° to 65° by day, ventilating from 65°, and fully between 70° and 75°. Supply water to the roots as required, affording weakly trees and those carrying heavy crops top-dressings of chemical manures occasionally—say every fortnight or three weeks, washing them in moderately, or afford liquid manure, alternating with the waterings.

Trees Started in March.—Thin the fruit now that it is swelling freely, and choice can be made of the most promising for the crop. Reserve those on the upper side or front of trellis; two or three on strong shoots will be ample to leave, and proportionately fewer on weaker growths. Remove all superfluous shoots gradually, retaining those only for attracting the sap to the fruit, which stop at two or three good leaves, and those from the base of the present bearing wood for furnishing fruit another year, with such extensions as are necessary. Train the growths as they advance, securing them loosely to the trellis. Afford liquid manure to such as require more vigour, but avoid stimulating vigorous trees too much, as that will encourage wood at the expense of the fruit stoning. Keep red spider under by syringing, and if aphides or other pests appear promptly apply an insecticide, those advertised being thoroughly efficacious and safe, provided the instructions are carefully followed.

Late Houses.—The fruits being well set, the trees will need syringing in the morning and on fine afternoons to rid them of the remains of the flowers. Commence thinning when the fruits are the size of horse beans, removing the smallest and worst placed, leaving a few more only than will be required for the crops; but regard must be had to the vigour of the trees, and their liability to cast some of the fruit or otherwise in stoning. Disbudding and laying in the shoots should be carefully attended to, doing the first gradually and the latter with due regard to the swelling of the shoots. A temperature of 50° at night and 55° by day artificially will be sufficient to keep the trees in steady progress, ventilating freely above that, unless it is desirable to hasten the crop, when a temperature of 55° at night and 60° to 65° may be secured, with 70° to 75° from sun heat, ventilating from 65°.

Unheated Houses.—The fruits have set well, quite four times as many as the trees can bring to a full size, and they should be thinned as soon as the best can be decided upon by their taking the lead in swelling. Over-burdening the trees in the early stages of the fruit swelling prevents their making wood for another season's crop, while excessive disbudding may cause the fruits to fall or a strong growth to be made. A moderate syringing on fine mornings will be a great assistance in ridding the trees of the remains of the blossoms; but afternoon syringing is not advisable, nor sprinkling likely to cause a moist atmosphere at night, as the weather is not yet to be depended on, and a severe frost occurring while the trees or house is damp is very much more likely to prove disastrous to the crop than if the atmosphere be dry. Ventilate at 50°, not allowing an advance above 65° without full ventilation, and close at 50°, or before if there is a prospect of frost at night. If water be necessary apply it sufficiently early in the day to allow of the surface becoming fairly dry before the house is closed.

Cherry House.—The Cherries are ripening rapidly, and they must be kept dry, but keep the surface of the borders moist by damping with

the syringe, air being admitted constantly, or condensation will seriously affect the fruit. The moisture of the border is apt to be miscalculated by the syringing keeping the surface damp, it should be examined and water supplied to keep the soil moist down to the drainage. Tie in the shoots as they advance, and stop those required to form spurs at about the fifth leaf. Black aphides must be kept under by dipping the shoots affected in tobacco water, gently rubbing them with the fingers, or their shining bodies will throw off the decoction and escape. Ventilate freely on all favourable occasions, and when the external conditions are unfavourable recourse must be had to the heating apparatus to insure a circulation of air. Netting will be necessary over the ventilators to prevent birds attacking the Cherries. Trees in pots should be well supplied with water.

Melons.—A firm soil of a rather adhesive nature, but not devoid of gritty matter, is necessary to secure short-jointed wood and solid fruits. The growths must be trained thinly to secure thoroughly solidified wood. A rather dry and well ventilated atmosphere favours the setting of the fruits. See that the fruits are nearly one stage of swelling, not allowing one to take the lead, or it will be difficult to get more to set. Attend to fertilising the blossoms in bright weather, nipping out the points of the shoots one joint beyond the fruit. Earth up the roots when the fruits commence swelling freely. Water well during the swelling, and place supports to the fruits in good time, such as pieces of half-inch deal about 6 inches square, with a hole bored at each corner, two pieces of string or wire being passed through the holes from the top coming underneath the label and then passing through again to the top, tying to the trellis to relieve the vine of the weight, and letting the board slightly incline to prevent water lodging. Pieces of netting are also employed for supporting the fruit. Stop the laterals after the fruits are swelling to one joint or remove them where likely to crowd. Maintain a good moisture by damping the paths and walls frequently, and syringe the foliage at closing or about 3.30 P.M. Water or liquid manure will be required about twice a week. The night temperature should be kept at 70°, 75° by day from fire heat, and 80° to 90° with sun. Ventilate freely in favourable weather, but avoid reducing the temperature at any time by its admission, commencing at 75° and increase or diminish the air gradually according to external conditions. Where the fruit is full sized and advanced for ripening gradually reduce the atmospheric moisture and the supply of water at the roots, but not so as to cause the foliage to flag, and afford a circulation of warm air when ripening, which is necessary to insure thorough maturity and high flavour. Keep the temperature at 70° to 75° artificially, and 80° to 90° with sun heat. Cracked fruits are produced by a close and moist atmosphere, with too much water or nourishment at the roots. If any show a tendency to crack cut the shoot about half way through a few inches below the fruit and diminish the supply of water at the roots and in the atmosphere.

Plants swelling their fruits require every encouragement, free syringing at closing time in hot weather, damping the floors when they become dry, and shading to prevent flagging. Free ventilation from 75° to 80°, and securing 80° to 90° from sun heat, will bring the fruit on rapidly; increasing the heat to 90°, 95° or 100° after closing, will render the fruit larger and lessen the necessity for fire heat at night, but it must be accompanied by plenty of atmospheric moisture. If aphides or thrips appear fumigate on two or three consecutive evenings, having the foliage dry, and for red spider or white fly dress the hot-water pipes with sulphur.

Pits and Frames.—Train out the growths and maintain a good bottom and top heat by linings and thick night coverings. Plants swelling their fruits should be well earthed up, have the laterals stopped and thinned, and the fruits placed on pieces of slate on inverted flower pots. Sow seed for raising plants to put out in pits and frames after they become cleared of bedding plants, potting seedlings as required.

Cucumbers.—Plants in bearing all the winter will now be showing signs of exhaustion, and had better be removed and their places filled with others without delay. Assist young plants which show signs of weakness by removing the staminate flowers and the first fruits, stopping at every third or fourth joint, removing all weakly superfluous growths. Shading will be necessary for an hour or two in the middle of the day when the sun is hot, especially for houses facing south, but shade only to prevent flagging. Houses with the roof lights facing east and west will not require shading or only in the afternoon. Little or no fire heat will be required by day, shutting the valves about 8 A.M., and opening them again about 4 P.M. or later, keeping a good moisture by damping the floors.

In Pits and Frames.—Sow seed to secure plants for placing in pits and frames, a fair amount of bottom heat being necessary, which is secured by using the less decomposed material from exhausted hotbeds, with about a fourth of fresh material. Ventilate moderately if the weather is cold, and close as early in the afternoon as safe, running up to 90° or more, and employ night coverings. Attend to the linings with a view to maintain good bottom heat, but be careful to avoid rank steam.

THE FLOWER GARDEN.

Dahlias.—Strong old roots stored where frost cannot reach them will, ere this, have started strongly. If retarded and planted out just as they are the result is rarely satisfactory, nothing but very severe thinning getting them into a free flowering habit. The better plan is to split the clumps, one or two tubers going with a single shoot. Place these divisions singly in 6-inch or rather smaller pots, and keep under glass in a light position till well established, when they may be hardened

off prior to planting out. One good lead is ample, and plants raised from cuttings are superior to those obtained by division. Do not keep the latter starving in small pots, but give a shift into 5-inch or slightly larger pots, and this will keep them growing strongly yet sturdily till planting out time arrives.

Hollyhocks.—Young plants left in the open ground survived the winter surprisingly well, and have grown very strongly since. If not already done the thinning out ought to be rather severe, one or two good flowering growths being ample. Should the soil be somewhat poor and the position dry bare the surface roots and mulch with short manure. Plants raised from either cuttings or seed, if they are to flower this season, must not be checked in growth. After they have well filled the pots to which they were shifted with roots, harden and plant out on well prepared ground.

Late Propagating.—If there is a probability of a scarcity of bedding plants propagation of some kinds should be persevered with. Soft tops of Veroenas, Iresines, and Coleuses root quickly in brisk heat, always providing they are well shaded from bright sunshine, and after being stopped once would be ready for potting by the time a number of small pots are emptied of Zonal Pelargoniums. They would also plant out direct from pans and boxes in which they are rooted, only in this case they must not be put in too thickly. It is not yet too late to sow African and French Marigolds, Tagetes, Sunflowers, and Ricinuses. All but the last named transplant ready from the seed boxes or pans, but the Ricinuses should be raised singly in 3-inch pots.

Campanulas.—There should be no further delay in sowing seed of *C. Medium calycanthema*, of which there are now several very attractive forms. Plants raised by sowing seed now in pans and placed in a frame, duly pricked out, and then planted in the open, would flower strongly next year. Those raised and similarly treated last year would transplant safely if need be, and a grand early summer effect could be produced by a mass of them in a border or bed.

Wallflowers and Brompton Stocks.—The former have done remarkably well this season, and the Stocks are also commencing to flower freely. Excellent dark and yellow strains of common Wallflowers can now be had, and with these may well be grown double German Wallflowers, which also are raised from seeds. All should be sown at once, as further delay may, and in the plants being strong enough to flower freely. Sow on a well prepared border thinly in drills 6 inches asunder, and if thinning out is properly done a portion of the plants may be allowed to flower where they are raised. If the ground cannot be made fine sow the seed in boxes, setting these in the open, and pricking out the seedlings before they become drawn and weakly.

Portulacas.—What is wanted to bring out the full beauty of these plants is a fairly hot and dry summer, and in any case those who would succeed well with them should grow them on raised beds of light sandy soil. They transplant badly, and the seed, therefore, should be sown where the plants are to flower. About the middle of May is a good time to sow the seed, and this ought to be done thinly in shallow drills drawn 9 inches apart. The seed must be quite surrounded with fine sandy soil. Thin out to not less than 6 inches asunder, and stir the ground among the plants occasionally.

Sweet Peas.—These are now very popular, and pay well for good cultivation. Quite the newest varieties usually succeed better than the rest, because the seed is dearer and scarcer, and the plants are grown thinly accordingly. Do not crowd the plants together on poor ground, and if raised thickly thin out freely prior to supporting with tall stakes. Any raised in pots and put out in well isolated groups—five or six plants are ample for each station—on well manured, deeply dug ground should flower continuously till late in the season, especially if freely cut from. Where, however, Sweet Peas are known to fail early, and they soon collapse on hot and dry soils, sow more seed now, preparing the sites by manuring liberally and digging deeply.

Hardy Edging Plants.—When the beds are edged with *Antennaria*, *Stachys*, *Ledums*, *Euonymuses* or other hardy grey or variegated plants these save a considerable number of tender plants and give, in some cases, a very neat finish to the beds. Instead of waiting till late in May before dividing and replanting these, this in some instances rather tedious work ought to be carried out immediately. If done in hot and dry weather there will always be a considerable number of failures. First well prepare the beds for their summer occupants, and then make the edges sloping and firm. Lift the plants to be divided and pull all to pieces, every portion with a few roots attached taking readily to fresh soil if properly fixed. Small pieces are always to be preferred to bunched up or larger masses. Dibble them in rather thickly, and if the weather is hot and dry water gently every evening, and roughly shade from bright sunshine during the hottest part of the day. The old *Stachys lanata* is a most effective edging for large beds, especially if a broad band is formed.



APIARIAN NOTES.

CAN honeycomb be improved in whiteness after taken from the hive? According to a statement by a correspondent ("G. R."), a judge at a show held last year said that it could be improved.

All honeycomb is liable to a slight change after it has been taken from the hive, depending entirely upon the condition of the place in which it is stored—whether it be humid or dry, kept dark, or exposed to the light. Sulphur and other mineral fumes acts upon the comb, but none of them improves the delicate and snow-white appearance of first-class honeycomb. The latter any good judge can easily distinguish from that changed from its original purity. I consider it the duty of a judge to point out defects and the merits of what he adjudicates, as well as to give hints how to bring about improvements.

"G. R." requires some hints on how to produce good sections of honeycomb. I have replied in a condensed form to what has appeared from time to time in these pages, so I need not repeat. His success, as it is also the case with everyone else who uses the Lanarkshire hive and works it as advised in these columns, is a proof of the soundness of the advice given in the *Journal of Horticulture*. I have often stated that bee-keepers ought to study their own interests, producing honey and honeycomb in the packages most suitable for the district in which they reside. They should also remember that bees do not enter sections so readily, nor do they store as much honey in them as they do in supers, and very often the former not so completely filled. Alike objectionable is the extractor when unsealed honey is taken by it.

The practice of extracting thick honey by means of heat is too common. Some persons turn all the combs into a boiler, then when in a very liquid state skim the wax, and pass the remainder through a sieve. Others mash the combs, and "glue-pot" fashion thin the honey, which thereby deteriorates much in quality. If British bee-keepers are to hold their own against foreign importations of honey, they must do their utmost to supply the million with honey in as pure a state as the bees store it in their upper stories, free from taint or colour on the combs. To be able to do all that, and to get the maximum quantity of honey, the hives must be large and strong in bees. Zinc queen excluders should not be used, and admit the bees to supers by the side openings only, keeping the centre of the top of the hive close. Work all hives with combs not older than one year, and as many as possible of the current year's make. Honey is an absorbent, taking in much water, and odours from old combs or any offensive matter placed near it when exposed. Unsealed honey contains water during the breeding season in the summer time, and ought not to be taken unless to be returned to the hive.

Regarding sections, I recently heard a letter read from a noted bee-keeper to his nephew, who had laid in a store of them. He said, "I have received your letter about the sections. Burn every one of them. It is large quantities of honey you require, that you will not have if you use sections. I have proven that." The above quotation is but a corroboration of many others which have been written to myself, and is in accordance with my own experience given long ago in these pages.

During the last summer Mr. G. Grierson, New Travers, near Lesmahagow, had a hive from which he took 250 lbs., leaving almost another 100 untouched in an enormous single-queened hive, which is again this year as promising as it was in 1893. It is another proof of the advantages to be gained by keeping bees in hives commensurate to the number a queen can produce.—A LANARKSHIRE BEE-KEEPER.



* All correspondence should be directed either to "THE EDITOR" or to "THE PUBLISHER." Letters addressed to Dr. Hogg or members of the staff often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post, and we do not undertake to return rejected communications.

Tomato Plants (X. Y. Z.).—The plants did not arrive till Wednesday, and the utmost we can do now is to notify the fact and promise careful examination.

Cactaceous Plants (J. D. H.).—Messrs. H. Cannell & Sons, Swanley, have a very good collection of Cactaceous plants, but if you wish to see the finest collection in the kingdom you will find it in the Royal Gardens, Kew.

Eatable Fungus (H. D. H.).—The specimen sent is a medium-sized example of the Morel (*Morchella esculenta*), which is preferred by many persons to Mushrooms. Morels usually grow under trees, and we know of no instances of their successful cultivation.

Calceolarias (W. R.).—No doubt the blooms were fine when you sent them, but a night in dry paper caused them to shrink and shrivel to such an extent as to leave nothing but a crumpled mass for inspection. We, however, know the strain is good, and that you grow the plants well.

American Tomatoes (P. C.).—We did not answer your letter sooner because we waited the delivery of some American catalogues. We do not find the names you mention in them, but the varieties may be all the same worth trying. We should, however, rely mainly on well-known English-raised Tomatoes for affording the bulk of produce required.

Bunches of Vegetables (Reader).—Asparagus is sold in bundles, 100 to 125 as a rule, but there are smaller. The number of different kinds of roots and heads in bundles and bunches is governed by the supply and the customs of markets. When vegetables are scarce the bunches are small, when abundant they are large. A list of Covent Garden Market fruit and vegetable measures is published in the *Horticultural Directory*, with a mass of other information worth having. Price 1s., post free 1s. 3d., from this office.

Gardenias (Constant Reader).—It is desirable to keep the plants a little drier after flowering for a week or two than they have been before. Then they may be pruned to any desired extent, syringing them frequently till fresh growths start freely. Repotting may then be done, removing loose soil and adding fresh to be pressed moderately firm. If the pots can be plunged in a damp medium this will be an advantage in securing uniformity of moisture at the roots, an insufficiency on the one hand and excess on the other being alike prejudicial. Gardenias enjoy a moist atmosphere, and should be frequently syringed to keep them free from insects.

Figs Spotted (E. R.).—Your very fine Figs are infested with the "spot," *Glaeosporium laticolor*, a fungus which has increased alarmingly of late years on many fruits, especially Grapes and Figs. It is very difficult to guard against this parasite, which, as a rule, attacks the choicest and best managed fruits. Gather those so affected and burn them, and as a safeguard against further attack paint the hot-water pipes thinly with a sulphur brought to a thin cream with skim milk. If you have no heat, place flowers of sulphur in shallow pans or saucers filled with water on shelves or other places where the sun will shine upon and cause evaporation from them as long as possible, or sprinkle a little sulphur on shelves or similar positions, as this may destroy the minute spores. In your case the spores fell on the fructifying organs during the flowering period, and the mischief was done long before it appeared externally. You must stamp out the enemy on the line suggested.

Grapes and Plants Rusted (A Troubled One).—We have examined the Grapes, Vine lateral, Begonia plant, Zonal Pelargonium, Alternanthera, and Dahlia sprays, and find only rust and some decay. There is some fungal growth on the decayed portion of the Begonia, but it is only mycelium and has not penetrated the living tissue, the cells of which are quite normal, large, and even active—the nucleus, nucleolus, and protoplasmic granules being well developed. The black spots on the Pelargonium are covered with a white mould, the outgrowths of fungi that live on decaying organic matter, and are purely saprophitical, their mycelia not penetrating the living tissues. The rest of your specimens are only discoloured and rusted, as with a corrosive substance, which is made clear by the contents of the water. This contains a very large amount of oxide of iron, the particles being held in suspension to a great extent by inorganic matter. This, however, is not excessive, nor are the organic acids; but there is no trace of lime, therefore it will be corrosive rather than "hard." The "trouble" arising from the use of iron water is considerable in many cases, but we had to use nothing else for all kinds of plants and fruits under glass for a dozen years, and found no difficulty attending its use, with a distinction. We had two supplies—one direct from the chalybeate spring, which contained 15 to 25 per cent. of iron oxide, held in suspension by organic matter, the red particles being distinctly visible to the naked eye, and in the tanks left a deposit, that became mixed with the water in dipping cans in it for watering, and this water caused a rusty appearance in all plants and fruits to which it was applied, except hardwooded plants. This only occurred occasionally, for our main supplies were drawn from a reservoir, the water from the spring supplying it being made to pass through a filter bed formed in the usual manner of gravel, sand, and charcoal. The supply pipe being 1 foot from the bottom of the reservoir, the water was clear and available for syringing purposes, yet it left a deposit (mineral) on glass, and to some extent on foliage, but not to a prejudicial degree. The iron in plants is most abundant in the bark and in the skin of fruits (as are all the mineral supplies in excessive quantities), and we consider the effects of the iron in the water would be such as your plants present. It certainly ought to be filtered or exposed in an open

reservoir, and only used clear for watering or syringing. It is preferably filtered through a charcoal bed, which would free it of the organic matter, while retaining the red oxide as sediment.

Red Spider on Apple Trees (J. O. B.).—The "small red kind of spider" is *Bryobia speciosa*, which is not connected with the American blight—that is, it is not parasitic on the woolly aphid, but itself preys on the tissues or juices of the Apple tree. Some persons make a distinction between this and the Ivy red spider, but it is difficult to find any difference except in size and colour; yet that of the Apple is not nearly so disastrous in its effects as the common red spider, which unfortunately swarms on Gooseberries and Apple trees, and is confounded with the *Bryobia*. Syringe the trees with a weak solution of softsoap, say 4 ozs. to a 3-gallon can of water, with a small handful of sulphur mixed with it, and supply liquid nourishment to the roots.

Green Fly on Gooseberries (J. P. & Son).—Bordeaux mixture is very unsuitable for application to Gooseberries, as the leaves and fruit are in many cases hairy, and the mixture adheres to them for a considerable time. Besides, it is not necessary as a preventive or remedial measure for insects, and it is better to employ a less dangerous solution—say, 4 lbs. of quassia chips steeped overnight in sufficient water, then boil fifteen minutes, let stand till cool and strain off the chips; in another vessel dissolve 4 lbs. of softsoap in hot water, add the quassia extract and the softsoap solution together and dilute with hot water to 50 gallons, stirring well. When cooled to 90° apply with a syringe or garden engine, delivering the wash as finely as possible, but wetting every part, especially the under side of the leaves and the growing points. Repeat, if necessary, in a few days.

Young Pears and Rose Buds Falling (F. O. S.).—1, Some of the Pears have fallen through their being imperfectly fertilised, and would have done so irrespective of anything that has been applied; but there are a few that have been injured and blackened in places by a substance, that you name being likely to cause the mischief, as the Pear is downy and easily damaged by mineral oils. The Rose buds are also discoloured, and have, no doubt, been injured by applying the mixture too strong and not properly emulsified. There is no "blight" in either case—that is, no disease caused by fungi, nor any trace of insects. 2, It is not a good plan to cover Asparagus with manure just before cutting, for if fresh it would be likely to taint the "grass," and if decayed calculated to spoil its appearance, if not cause the heads to decay. It is a common practice, however, to cover the crowns with soil to a depth of 6 inches, so as to secure heads of that length, with about an inch of coloured tips, but the soil is removed after the cutting is over.

Moorpark Apricots Brownd (J. W. K.).—The fruits are simply browned by exposure to the sun and possibly slightly touched by frost, but this must have been very little, for the hairs (down) do not give any indication of injury under the microscope, and the skin is perfectly healthy, that is, the epidermal cells are normal, and those beneath quite free from any disorganisation. It is not advisable to remove all fruit so marked, as those which receive the most light are usually the best flavoured, but such fruit is apt to ripen on the sun side long before the shaded, and become brown and shrivelled. This might be prevented by a slight shade of hexagon netting directly the fruit commence changes for ripening, the higher colour or even browned fruits are the best flavoured though not the most attractive in appearance. Thin the fruit by all means if the crop is too heavy, leaving the largest and best placed. The thinnings, as you no doubt are aware, make excellent tarts, and the brown ones are better than the green in flavour even at this early stage.

Slaughter-house Liquid for Vines (A Highlander).—Thoroughly mix the blood and refuse in a trough or shallow box with 5 per cent. of its weight of dry, freshly slaked lime, and cover with a thin layer of lime. This mixture, when dry, can be kept for a long time without appreciable change, and may be used as required for Vines or fruit trees, using one or two good handfuls per square yard as a top-dressing. It should be reduced to powder. Another and perhaps better plan for Vines is to mix as much wood ashes with the blood as will form a crumbly mortar-like mass, to be dried under cover, then apply a handful or two per square yard on the border, lightly pointing it in or covering with a little soil. It may be given when the Vines are starting into growth, again when the Grapes are set, when about half grown, and when the stoning is completed. This is equivalent to four dressings, which are quite sufficient. It is a valuable manure for fruit trees, indeed for all horticultural purposes, and is effective on all soils, but is especially so on those which are light, poor, and sandy.

Tea Roses (W. R.).—It is somewhat early for Tea Roses to have "done blooming." Properly treated they ought to have gone on flowering till Roses are plentiful in the open. This class of Roses succeed well under glass all the year round, and could be made to produce blooms more or less freely during nine months out of the twelve. The house in which they are kept should be freely ventilated during the hottest part of the summer, and moderately warm during the rest of the year. In warm localities they thrive well in the open air during the summer months, but must be housed before cold, wet weather sets in. In either case, or whether you keep the plants under glass or turn them out in June, cut them back rather freely now and when breaking afresh slightly reduce the old balls of soil, and transfer to pots that will hold the roots comfortably. Use a compost consisting of two parts of brown fibrous loam to one of leaf soil, adding sharp sand freely and a

little charcoal. Pot moderately firm. Pinch off all buds that form during the summer, and the strong, well-matured growth eventually resulting will flower abundantly in the autumn and throughout the winter. When kept free of red spider and mildew, and well fed at the roots, there is no cessation of growth and consequently flowering.

Names of Plants.—We only undertake to name species of plants, not varieties that have originated from seed and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in firm boxes. Slightly damp moss, soft green grass or leaves form the best packing, dry wool the worst. Not more than six specimens can be named at once, and the numbers should be visible without untying the ligatures, it being often difficult to separate them when the paper is damp. (J. C. W.).—*Cerasus (Prunus) Padus*, the Bird Cherry. (W. Lamb).—*Gynura aurantiaca*, stove herbaceous perennial, introduced from Java in 1882. (T. W.).—*Cerasus (Prunus) Padus*, the Bird Cherry. (Amateur).—*Kerria japonica flore-pleno*. (Jonas).—*Lonicera tartarica*. (Yorks).—1, *Doronicum caucasicum*; 2, *Cyperus alternifolius*; 3, *Hellebore viridis*. (Bruce).—1, *Cercis siliquastrum*; 2, *Spiraea prunifolia flore-pleno*; 3, *Erodium*, species not determinable as the petals had fallen; 4, *Rosa nitida*; 5, not recognisable; 6, undeveloped, and not in condition to be named. (J. W. S.).—*Pyrus spectabilis*.

TRADE CATALOGUES RECEIVED.

M. Bruant, Vienne, France.—*General Catalogue of Plants.*

J. Laing & Sons, Forest Hill, S.E.—*Fancy-leaved Caladiums.*

Andrew Potter, Melbourne Works, Wolverhampton.—*Hose, Manures, Tents, and Garden Sundries.*

COVENT GARDEN MARKET.—MAY 9TH.

TRADE generally slower, Strawberries and Grapes not maintaining former rates. The holidays before us will affect prices generally.

FRUIT.

	s.	d.	s.	d.		s.	d.	s.	d.
Apples, per bushel	2	6	10	0	Peaches, per doz.	0	0	0	0
Ta-manian, per case	8	0	12	0	Plums, per half sieve ..	0	0	0	0
Cobs	45	0	50	0	St. Michael Pines, each ..	2	0	6	0
Grapes, new, per lb.	3	0	4	0	Strawberries per lb.	1	6	3	0
Lemons, case	10	0	15	0	" morning gathered	3	0	5	0

VEGETABLES.

	s.	d.	s.	d.		s.	d.	s.	d.
Asparagus, per bundle ..	2	0	5	0	Mushrooms, punnet	0	9	1	0
Beans, Kidney, per lb. ..	1	0	1	3	Mustard and Cress, punnet	0	2	0	0
Beet, Red, dozen	1	0	0	0	Onions, bushel	3	6	4	0
Carrots, bunch	0	3	0	4	Parsley, dozen bunches ..	2	0	3	0
" new, bunch	0	9	1	0	Parsnips, dozen	1	0	0	0
Cauliflowers, dozen	1	6	3	0	Potatoes, per cwt.	2	0	4	8
Celery, bundle	1	0	1	3	Salsafy, bundle	1	0	1	5
Coleworts, dozen bunches	2	0	4	0	Scorzonera, bundle	1	6	0	0
Cucumbers, dozen	1	6	3	0	Shallots, per lb.	0	3	0	0
Endive, dozen	1	3	1	6	Spinach, bushel	1	6	3	0
Herbs, bunch	0	3	0	0	Tomatoes, per lb.	0	6	1	3
Leeks, bunch	0	2	0	0	Turnips, bunch	0	3	0	4
Lettuce, dozen	0	9	1	0	" new, bunch	0	8	0	10

AVERAGE WHOLESALE PRICES.—OUT FLOWERS.

Orchid Blooms in variety.

	s.	d.	s.	d.		s.	d.	s.	d.
Arum Lilies, 12 blooms ..	1	6	3	0	Pausies, dozen bunches ..	1	0	2	0
Azalea, dozen sprays ..	0	4	0	9	Pelargoniums, 12 bunches	6	0	9	0
Bluebells, dozen bunches	1	0	2	0	Pelargoniums, scarlet, doz.				
Bouvardias, bunch	0	6	1	0	bunches	4	0	6	0
Camellias, dozen blooms ..	0	9	2	0	Primula (double), dozen				
Carnations, 12 blooms ..	1	6	3	0	sprays	0	6	1	0
Cowslips, dozen bunches ..	1	0	2	0	Primroses, doz. bunches ..	1	0	2	0
Eucharis, dozen	2	0	4	0	Pyrethrum, dozen bunches	6	0	9	0
Gardenias, per dozen ..	1	0	4	0	Roses (indoor), dozen ..	1	0	2	0
Iris, dozen blooms	0	6	1	0	" Tea, white, dozen ..	1	0	3	0
Lilac (French) per bunch	2	6	4	0	" Yellow, dozen	2	0	4	0
Lily of Valley, doz. sprays	0	6	1	0	Roses (French), per dozen	1	0	2	6
" doz. bunches	4	0	8	0	Roses, Safrano (English),				
Lilium longiflorum, per doz.	2	0	4	0	per dozen	1	6	2	0
Maidenhair Fern, dozen					Roses, Marchal Neil, per				
bunches	4	0	6	0	dozen	1	6	5	0
Marguerites, 12 bunches ..	1	6	4	0	Tuberose, 12 blooms ..	0	6	1	0
Mignonette, 12 bunches ..	3	0	6	0	Tulips, dozen blooms ..	0	3	0	6
Myosotis or Forget-me-nots,					Violets, Parme (French),				
dozen bunches	2	0	4	0	per bunch	2	0	3	6
Narciss, various (French),					Violets (French), per				
dozen bunches	2	0	4	0	bunch	1	0	1	6
Orchids, per dozen blooms	1	0	9	0	Wallflowers, doz. bunches..	2	6	4	0

PLANTS IN POTS.

	s.	d.	s.	d.		s.	d.	s.	d.
Arbor Vitæ (golden) dozen	6	0	12	0	Genista, per dozen	6	0	12	0
Arum Lilies, per dozen ..	6	0	12	0	Hydrangea, per dozen ..	9	0	18	0
Aspidistra, per dozen ..	18	0	36	0	Ivy Geraniums	6	0	9	0
Aspidistra, specimen plant	5	0	10	6	Lilium Harrissi, per dozen	15	0	30	0
Azaleas, per dozen	18	0	30	0	Lycopodiums, per dozen ..	3	0	4	0
Cineraria, per dozen ..	6	0	9	0	Marguerite Daisy, dozen ..	6	0	12	0
Dracæna terminalis, per					Mignonette, per doz. ..	6	0	9	0
dozen	18	0	42	0	Musk, per dozen	4	0	6	0
Dracæna viridis, dozen ..	9	0	24	0	Myrtles, dozen	6	0	9	0
Ericas, per dozen	9	0	24	0	Nasturtiums, per dozen ..	1	6	6	0
Euonymus, var., dozen ..	6	0	18	0	Palms, in var. each	1	0	15	0
Evergreens, in var., dozen	6	0	24	0	" (specimens)	21	0	63	0
Ferns, in variety, dozen ..	4	0	12	0	Pelargoniums, per dozen ..	9	0	18	0
" (small) per hundred ..	4	0	8	0	" scarlet, per doz. ..	4	0	6	0
Ficus elastica, each	1	0	7	6	Roses, various, per dozen ..	12	0	36	0
Foliage plants, var., each	2	0	10	0	" (Fairy), per dozen ..	9	0	12	0
Fuchsia, per dozen	6	0	9	0	Spiræas, per dozen	6	0	12	0

Roots in variety for planting out, in boxes or by the dozen.



FARM CROPS.

WHEN a large profit was possible upon a crop of 3 or 3½ quarters of Wheat per acre, was the golden age of farming. Then was the time when Wheat and plenty of it was the guiding principle, and farm management was so easy, its profits so sure, that very little thought was given to anything beyond a four-course shift. Bare fallows were considered a necessity just because farmers could afford to have them, and there was no anxiety about market fluctuations because the high price of corn made an occasional bad market a matter of comparative indifference.

Those easy-going times are ended. From Canada, Australia, New Zealand, the United States, the Argentine Confederation, Chili, India, and Russia, Wheat is pouring into this country in such abundance that according to a recent report the consumptive trade of this country is quite overwhelmed with a plethora of present and prospective supply. Every quotation of prices for home grown and foreign Wheats is under 30s. per quarter, 29s. being the highest, and 22s. 6d. the lowest at Mark Lane on April 30th. It is, therefore, certain that the profitable cultivation of Wheat here is only possible under exceptionally favourable conditions of soil and cultivation. Under the term of cultivation manure is an important factor; we may even go so far as to term it the most important, for without it success is now impossible. Of what such manure should consist has been well shown by the experiments of the Sussex Association for the Improvement of Agriculture. Under the advice of Professor Jamieson, when the Wheat is sown in the autumn, 1 cwt. of chemical manure per acre, consisting of ½ cwt. nitrate of soda, ¼ cwt. steamed bone flour, ¼ cwt. superphosphate, is mixed and drilled with it. In spring ½ cwt. nitrate of p tash, 1½ cwt. nitrate of soda, ¼ cwt. steamed bone flour, and ½ cwt. superphosphate per acre are sown broadcast as a surface dressing, the estimated cash price of the manure for the two dressings, autumn and spring, being about 34s. 6d. per acre. This was the formula published by Professor Jamieson in the report of the Proceedings of the Association in 1888. In that report appeared a letter from Mr. James Allen of Battenhurst, Ticehurst, in which he says that from practically using Professor Jamieson's manure he obtained 7 quarters 2 bushels of Wheat per acre from a reputed poor field, and he also mentions a yield of upwards of 2 tons of Wheat straw per acre. Where such crops can be had, and both corn and straw can be sold, Wheat may certainly be still regarded as a profitable crop. Conditions of culture and yield of crop are alike exceptional, we should certainly add to them a carefully selected sample of seed, and early sowing in autumn.

Barley was put in so well that good malting samples may be looked for, and profitable crops had once more. The general use of the chaffed straw as fodder for horses, store cattle, and sheep adds to its value, and a certain quantity of grinding Barley is also useful for home consumption. A crop that is so much the sport of seasons should always be confined within reasonable limits. In these critical times we cannot afford the risk of too large an area under crops of a speculative nature.

Of all the cereals Oats should now have the leading place, both because it is the most useful and the most profitable. As a fodder crop it is invaluable, and is turned to account in a variety of ways. The winter Oat is always available for the flock when the herbage of the pasture is scanty in winter. It may be eaten off closely in folds, and then give a strong second

growth, which is harvested before other corn. Under good management it never goes into ricks, but is carted from the field to the threshing machine, the straw being at once cut into chaff, thrown into a barn head, salted, and trampled into a compact mass. Gentle fermentation follows, flavour is developed, rendering the chaffed straw so palatable that it is eagerly consumed. If it is not threshed, but corn and straw are all chaffed together, it is so nutritious that sheep and cattle fatten well upon it. We give this excellent plan once more, specially for the benefit of new readers, to whom we heartily commend it as a means of providing nutritious fodder just when horses are working very hard, and sheep-folding has to be provided for.

As silage a well grown crop of Oats is invaluable. Mown when of full height while quite green it yields 20 tons of silage per acre, which, if the ensilage is well done, keeps good for two years. The silage is much more nutritious than the dry straw, of which so much was used last winter to keep cattle alive. Of the corn itself very little need be said. A fine sample of Oats is always a marketable commodity, a good crop of Oats is always profitable. The manure used by the Sussex Association for both Oats and Barley is the same as that used in spring for Wheat.

WORK ON THE HOME FARM.

The showery weather has been so favourable to growth generally that all crops have a good start this spring. We have seen much more transplanting of Cabbages than usual, and regard the extension of this useful crop as an outcome of the long drought of last year. Much corn hoeing has been in hand. It had to be pushed on, as growth is so brisk and forward that the corn has covered the ground much quicker than usual. Our chief effort has been to keep under Thistles. Annual weeds will be smothered where the corn is a full thick plant, with the exception of Charlock, which appears able to hold its own in any season. Mangolds have come up well, and the horse hoes have been at work among them. A dressing of nitrate of soda tells well if applied after the first turn of the horse hoe; it quickens as well as strengthens growth, the plant is soon out of harm's way from insect pests, and is so well established in the soil as to withstand the effects of drought.

Market reports are cheering to graziers. At the Lincoln April Fair sheep realised 8s. to 10s. more per head than they did at the same fair last year. Store cattle and cows too are advancing in price, and those farmers who have managed to keep up condition in their live stock since last autumn are reaping the benefit now. Grass is so abundant and forward that a good grazing and hay season seems a certainty.

All field work is being pushed on as fast as possible in order to be ready for the early haysel which we shall have this year. Mowing for hay both of mixed seeds and permanent pasture will begin at once when the Grasses are in flower, so as to have hay fully nutritious, and an abundant aftermath. We hold that grass for hay should always be mown before there is any tendency to seed development. That is the best hay, altogether superior to that made from grass left longer before the mowing for the sake of obtaining a little more bulk of crop. This is a timely hint, a warning to be ready, to get other work out of hand so far as is possible, to see that all implements required for the hay-making are in good order, and that they are not left for repairs till they are wanted for use. Under good management this was done during the winter, when all implements and vehicles have an annual examination, and are got into good order for use when required.

METEOROLOGICAL OBSERVATIONS.

OAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude, 111 feet

DATE.		9 A.M.					IN THE DAY.				Rain.
1894. April and May.		Barometer at 32° and Sea Level.	Hygrometer.		Direc- tion of Wind.	Temp. of soil at 1 foot.	Shade Tem- perature.		Radiation Temperature		
			Dry.	Wet.			Max.	Min.	In Sun.	On Grass.	
		Inchs.	deg.	deg.		deg.	deg.	deg.	deg.	deg.	Inchs.
Sunday ..	29	30.144	51.9	47.4	N.W.	49.2	64.9	36.9	101.7	30.0	0.061
Monday ..	30	30.063	54.0	5.7	N.	50.9	56.7	50.0	69.0	47.9	0.053
Tuesday ..	1	30.324	49.6	44.7	N.E.	49.9	54.3	38.9	98.1	31.6	—
Wednesday	2	30.242	48.9	45.9	W.	44.9	55.8	36.3	93.7	28.4	0.030
Thursday ..	3	29.853	55.0	50.8	S.W.	49.1	60.7	46.6	98.1	45.1	0.010
Friday ..	4	29.829	52.4	44.6	N.W.	49.6	55.3	42.9	104.3	36.1	—
Saturday ..	5	29.944	49.0	42.1	N.W.	48.9	62.0	37.2	115.0	29.3	—
		30.057	51.5	46.6		49.5	58.5	41.3	97.1	35.5	0.154

REMARKS.

- 29th.—Bright sunshine till about 4 P.M.; generally cloudy after.
 30th.—Almost continuous rain or drizzle from 1 A.M. to 9 A.M.; overcast and dull day, with frequent spots of rain, and rain from 3.30 to 4 P.M.
 1st.—Frequent sunshine, but overcast and threatening at times.
 2nd.—Overcast throughout, spots of rain in evening and rain from 1 P.M. to midn'ght.
 3rd.—Gleams of sun at rare intervals; generally overcast and a shower at 11 A.M.
 4th.—Alternate cloud and sunshine, and high wind.
 5th.—Bright sunshine almost throughout.
 Temperature (for the first time for more than two months) slightly below the average.—G. J. SYMONS.



THE month of smiles and tears passed away after yielding us in the north more of the delights of sunshine than of those frequent showers which refresh the earth. Still there was sufficient rain for the needs of the spring flowers, and now May has well advanced the garden is bright with bloom. My small front garden is aglow with colour softened by the green leaves of the Daffodils and other bulbous flowers and the fresh foliage of the taller herbaceous plants. In it I strive to keep in mind the idea of a late well-known horticulturist, that a front plot belonged partly to the public, and so endeavour to have flowers at all seasons. At no time does it look brighter than when Aubrietias, Arabis, Alyssums, and Tulips, with other flowers of many kinds, are in perfection.

I am not ashamed to say that I have a "Dutch love for Tulips," as Lord Tennyson put it, and take pleasure in these cups of brilliant colour which are the products of the florist's skill as well as the many beautiful species now at our command. Still I must qualify this by the reservation that I have no love for the double ones, although I grow a few, and think the perfect form of some of the singles, either in bud or when open, the more delightful. A good single Tulip which, though old, is said to be coming into fashion again I have had for a number of years, and as it increases well I have now many in my garden. This is Golden Eagle, a fine yellow Tulip with pointed petals, but still of beautiful form and much admired by all who see it. The flowers open yellow at first, but the edges of the petals soon become tinged with scarlet, which deepens in colour and broadens in size. In any stage it is very pretty, and in the mixed border of hardy flowers makes a fine effect. Very beautiful, too, in the front row of a border is the little *Tulipa linifolia*, which was introduced eight years ago, but is still too seldom seen. Its normal height is said to be about 6 inches, but in my garden it is only 5 inches from the ground to the top of the flower. The leaves are very narrow, and the flowers are large in proportion to the size of the plant. The inside of the flower is of a very brilliant scarlet with a jet black zone at the base, while the outside is of a duller scarlet with a creamy yellow tinge at the top of each petal. It is one of the few Tulips which would not be out of place on a select rockery, if so surrounded that its slight stiffness of habit common to most Tulips would be modified by adjoining plants. Very fine, too, for the rockery or front of the border is the beautiful little yellow *T. persica*, a great favourite of mine, which in the sun opens out nearly flat, and is of a brilliant yellow. But one must not allow these splendid flowers to monopolise all their space, especially as lovers of the justly admired English Tulip have had something to say of their blooms.

Valued, I suppose, more for its comparative rarity than for its beauty is the white-flowered Quamash, *Camassia esculenta alba*. I am referring to it now not to recommend it, but to warn those who may see it in catalogues not to expect anything nearly so fine as the typical blue Quamash, now so cheap. I have had the white one for more than four years, and each year finds me less desirous of retaining it in the garden. White it may be called for courtesy's sake, but when, as here, grown near the beautiful Poet's Narcissus, snowy Arabis, *Hutchinsia alpina*, or the pure spikes of the white Honesty, the whiteness is seen to be not even creamy white, but one of a greenish huc, far from pleasing to the eye. It is one of

the flowers we can well spare. The mention of the white variety of the common Honesty reminds me that this flower is worthy of some little attention. If, as the old proverb tells us, the Honesty or "Money in both Pockets" will only grow in the gardens of honest people, I suppose no further certificate of my possession of that virtue will be needed than a look into my garden, where it has only been once sown in the last ten years. It becomes one of those "weeds" requiring not merely thinning out, but wholesale destruction. Very fine it is, however, with its purple or white spikes of flower succeeded by the curious orbicular seed vessels, which, when dried and the covering removed, are so useful for decorations with their silvery pods. This, again, reminds me of the perennial *Lunaria rediviva*, which is scarce. Twice have I seen seed catalogued, and twice have I failed to get it when ordered.

Some time ago I spoke of *Lithospermum purpureo-cœruleum*. What I said of the plant hardly accorded with the opinion of a well-known grower of alpine, who in the course of some correspondence told me that I had hardly done justice to this Gromwell. I had not been quite so successful in flowering it as I should have been, and was consequently less inclined to praise its merits. This year it came into flower about the middle of April, and its appearance leads me to confess that my scant praise was too faint, and did less than justice to its beauty. I feel assured, however, that a further reference to it will be of value should it lead to this flower receiving more attention than hitherto. It seems to prefer a little lime in the soil, as I am disposed to attribute its greater beauty this year to the addition of some old mortar to the earth in which my plant is grown. Here it grows about 15 inches high. The flowers, which are in terminal racemes, are purple at first and pass to bright blue. In order to induce flowering the long, prostrate, barren stems should be pinched off. As I now have it in flower, this Gromwell is not to be despised even when grown in the same garden as *L. prostratum*, *L. Gastoni*, and *L. graminifolium*.

The alpine Phloxes are most beautiful at present, trailing over stones on the rockeries or stone edgings to the garden walks. I have about a dozen different species and varieties, and one of the prettiest and freest flowering of these is a variety of *P. subulata* or *setacea*, which originated in an Irish nursery, and has been named Newry Seedling. It is a pity that some other and more attractive name was not given to this alpine Phlox, with its pretty lilac flowers covering the plant with beauty, and of good constitution and free growth. My plant is growing on a rockery facing west, and is much admired by all who see it. Very beautiful, too, is the neatest and best of the Hedge Mustards, *Erysimum pumilum*, growing on the same rockery as Phlox Newry Seedling. It grows to 3 inches in height, and the little patch in a pocket filled with sandy peat and grit is covered with small sulphur-coloured fragrant flowers, so freely produced as to hide the foliage. This dwarf Hedge Mustard, although a native of Europe, and introduced in 1823, is still too seldom seen in alpine collections.

Using the word in other than its generally accepted sense we may say, however, that the glory of the garden now consists not in the brilliant Tulips nor in the flowers of the alpine garden, but in the strangely beautiful flowers of *Iris lupina*. This "Wolf's Fur Iris," which has been in my garden for two years, came into flower here for the first time on April 28th. Its flowering just when one was about to despair of succeeding in this climate and soil with these Cushion Irises will, I suppose, have the effect of inducing me to add to the few of the *Oncocyclus* section I have up till now been content to struggle in vain to induce to bloom. The opening of such a flower marks a red-letter day in the annals of the hardy flower garden, and one would fain speak worthily of the wonderful colouring of its bloom. It seems in vain, however, to attempt it, and I must unwillingly yet gratefully be indebted to

Mr. Baker's "Handbook of the Iridæ" for a description of the colour. This work speaks of it as follows:—"Limb dull yellowish green with fine red-brown veins, falls * * * with a velvety dark brown patch at the throat and a diffused yellowish beard down the haft." I have no doubt Mr. Baker himself will agree that even this admirable description fails to tell properly of the beautiful shades of colour on this Iris. It will, however, be of more use possibly to tell of the treatment this plant received here than to say more of its beauty. When I obtained it from Holland it was planted in a border of sandy peat mixed with road grit, where it failed to flower the first year. Last autumn some other Irises of the same section came to hand, and *I. lupina* was planted with the others, which were small plants, in a bed of dry sandy peat fully exposed to the sun. In very wet weather a flower pot was placed over each, and in severe frosts the whole were covered with the dry stems of some of the Michaelmas Daisies to a depth of 3 or 4 inches. Early in March all protection was withheld. Besides *I. lupina* *I. Lorteti* looks as if it would flower; but, being a weak plant, I hardly expect to have the pleasure of flowering it this year.

—S. ARNOTT, *Dumfries*.

GRAPE GROS MAROC.

EXPERTS describe this Grape as being "first-class in quality, tender, sweet, and richly flavoured," and so forth, but how often does it merit such eulogiums? Is it the fault of the cultivator that the quality more often than not is decidedly second-rate, or are there more than one form of Gros Maroc in cultivation? That the flavour is largely affected by cultivation is indisputable, as I shall attempt to prove, but first must express an opinion on the point as to whether there are more than one form or not. Personally, I have long held to the opinion that there are at least two distinct forms to be commonly met with, one, as far as appearance goes, being decidedly superior to the other. In "The Fruit Manual" it is stated that Gros Maroc and Cooper's Black are synonymous, but the latter as grown by Mr. David Thomson at Drumlanrig, and grafts of which he kindly sent me, has proved so much superior to what I had hitherto had as Gros Maroc that it has entirely superseded it. What for the present I will still term Cooper's Black is of the same robust habit of growth as Gros Maroc, and apparently the most free-bearing of the two. The bunches also are larger, more conical, and more handsome in form, the berries likewise differing, inasmuch as they are somewhat oval in shape.

Perhaps I am prejudiced in favour of Cooper's Black, for I also think it the most easily coloured, and of superior quality to the "dumpy" bunched, round, though large-berried, Gros Maroc. Dr. Hogg in "The Fruit Manual" mentions that the latter is "frequently confounded with Gros Damas, from which it is distinguished by its smoother and more deeply-cut leaves, shorter-jointed wood and earlier ripening." Gros Damas is not thought worthy of any further mention, but the question I mentally asked on looking over this passage was, "How many persons in this country are growing it under the name of Gros Maroc?"

It is a strange and generally admitted fact that Gros Maroc, and under this name we will now include Cooper's Black, is very difficult indeed to establish on its own roots. When first planted and for a long time afterwards it refuses to grow at all healthily, and I believe it may safely be asserted that there are very few own-root Vines of Gros Maroc to be met with. I cannot point to one example. The Black Hamburg is the stock on which it has been most frequently inarched or grafted, and it suits it well. What is wanted is something to restrain over-luxuriance, and which might also mean shy bearing. Inarching or bottle grafting Gros Maroc on the Black Hamburg is a ready means of converting unprofitable Vines into fairly profitable ones, as it is certain very little is made out of good crops of Black Hamburg nowadays, the showier if inferior Gros Maroc selling more readily at enhanced prices. Moreover, an attractive appearance goes a long way with consumers of their own Grapes, handsome bunches, or something to talk about, not unfrequently counting for more than average samples of better flavoured varieties. Seeing also that Gros Maroc ripens fairly well, and only a little later than Black Hamburg without much fire heat, keeping rather better too, that is another good reason why it should partially replace the latter in many cases where it is grown extensively.

Curiously enough the best flavoured Gros Maroc Grapes I have tasted were cut from a rod inarched on old Vine of Foster's

Seedling. This at first sight would appear no chance occurrence, as one instance of this was met with in Worcestershire and the other in Middlesex. The bunches and berries in each case were large, the colour good, and the flavour better than that of ordinary Black Hamburg. Foster's Seedling cannot be classed as extra good in quality, and I fail to see how it could affect the Gros Maroc other than by checking undue luxuriance. The Black Hamburg is the better Grape of the two, and if the stock has very much to do with the improvement of the quality of the crops produced by the scion, it is to the last named that I should look for it. In all probability we must credit something else with any extra good results that may be forthcoming.

It would really appear to be all a matter of judgment in cropping. Leaving as many bunches hanging as the Vines will finish, as far as colouring and bloom are concerned, most probably means overdoing it, for the simple reason that no other Grape colours more surely, in spite of overcropping. A friend of mine repeatedly grew some of the heaviest crops I have ever seen of Gros Maroc, the bunches being extra large, and almost touching each other at places. Nor could any fault be found with either the size or finish of the berries, several of the bunches figuring conspicuously in prize collections at leading shows. Owing to being partly inarched to a strong Vine of Alicante, and partly on its own roots, the various rods gave little or no signs of being overworked, but the quality of the Grapes was decidedly poor, and this, as proved by what took place in another compartment, was a sure sign of overcropping. If gardeners generally would be content to take about the same weight of bunches from their Vines as the same length of rods of Black Hamburg finish properly, we should hear fewer complaints of poorness of quality. Fire heat, or enough to maintain a gentle circulation of warm dry air, is also an important factor in the proper ripening of the Grape under notice and those who wholly or largely dispense with it will have to be content with Grapes of second-rate quality, as well as the probability of the wood ripening insufficiently to produce well formed bunches in abundance. Neither of the gardeners who grew the richly flavoured Gros Maroc previously alluded to were cropping heavily, and both used fire heat somewhat freely. It should also be remembered that those Grapes ripened in heat accompanied by plenty of air, having a minimum amount of water and a maximum of sugar in their composition, are much the best keepers.

What is known as the extension system of training appears to suit Gros Maroc better than the single rod arrangement, this being the surest outlet for any extra luxuriance there might otherwise be. Young well-ripened canes also produce the finest bunches, and if proper judgment is exercised in the selection and thinning of these bunches they will be as handsome in form as any variety in cultivation. When the extension system, and which may be roughly defined as that of laying-in rods where there is room for them, is adopted, this might also include a modification of the long rod system of training and pruning. By laying-in a young cane or two each season, and occasionally cutting out old ones after the crops are cleared off in the autumn, there will always be lengths of young canes at different points or distributed all over the roof, and fine bunches will be the order of the day. Hard pruning is a mistake in the case of this strong-growing Grape. Instead, therefore, of spurring back the laterals to the first or second bud, they should be shortened to the third or fourth bud, bunches being fairly plentiful and of good size accordingly. When the spurs become objectionally long, as they soon do, the extension system of training admits of the rods bearing them being cut cleanly out, and their places taken by young ones, without therefore being noticeable.

Young leaves of the Gros Maroc are very flimsy, and unless the ventilation is well attended to they are liable to scald badly. Enough fire heat ought to be given to keep moisture from collecting on the edges of the leaves during the night, and a small amount of air should be given early enough to prevent any sudden great increase in temperature from strong sunshine. Many Vines have been disfigured and the value of the crops greatly impaired owing to non-attention to these apparently trifling but really very important details. Gros Maroc is not a shy setter, but if full sized berries are desired they must have their complement of stones. It pays, therefore, to take a little trouble with the fertilising. The warmth in the hot-water pipes and early admittance of top air leads to the thorough drying of the pollen before mid-day, and this may be effectively distributed, either by smartly tapping the laterals supporting the bunches, or by drawing the soft palm of the left hand gently over the bunches every morning when in flower, this never failing to transfer the pollen grains to the moist stigma of the flowers. The thinning-out of the berries ought to be extra severe, and not be long delayed. My failing has always been in

the direction of under-thinning, leaving a few berries to be taken out "at the last minute" is almost certain to lead to the rubbing and disfigurement of those retained.—W. IGGULDEN.

HARDY AZALEAS.

AMONG the hosts of flowering plants and shrubs which adorn the gardens of this and many other lands, how noticeable it is that the various varieties of each species usually produce flowers, which however distinct they may be to a casual observer, are in reality only different shades of the same colour. Take, for instance, the Rose. Among Hybrid Perpetuals we have crimson, carmine, and pink shades of colour, and among them may be found a series of gradually deepening tints, which, if arranged in succession, would carry the eye almost imperceptibly from the palest to the deepest. Then among the Teas we have yellows, creams, bronzes, and creamy pinks, a similarity of colouring seems to be present in them all. Hardy Rhododendrons, too, though wonderfully varied in their markings do not yet supply us with a bright yellow, a blue, or a vivid scarlet. Whether or no we are likely to have them I cannot pretend to say. I am not learned in the science of the colour evolution, but simply state the facts as they appear to me.

After this somewhat wide diversion I come to the plants whose beauties I sat down to write about, for undoubtedly they form a great feature at the present time in gardens where they are largely grown. Hardy Azaleas are indeed showy shrubs which hold an unique position among the inmates of our gardens, on account of the great variety of novel and beautiful shades of colour which their flowers possess. Orange, cream, yellow, salmon, terra-cotta, and buff may each be found among them in a distinct form. Then there is a great variety of intermediate shades of colour, which supply abundant material with which to display ingenuity and skill in the art of colour blending.

In planting large beds a charming effect is obtained by arranging each shade of colour in a mass, beginning with the darkest in the centre, and so graduating them as to have the lightest and softest shades in groups around the edges. Now, while the majority are in flower, there is a good opportunity for taking notes as to which varieties harmonise when planted near each other, for from the peculiar tints of many of them no written description will convey an adequate idea of the effect produced by planting particular varieties in juxtaposition; there is also a considerable difference among them in regard to time of flowering; it is therefore a good plan to mark in separate lists those kinds which flower simultaneously, as well as to denote which should be planted next each other.

Many persons seem to confound the various varieties of Azalea mollis with those of Ghent Azaleas. The former have much larger and better shaped flowers than the latter, and the plants assume a more bushy habit, and do not grow so tall as the true Ghent Azaleas. For these reasons I prefer to keep each species in separate beds, so that the growth of the stronger does not overcrowd the weaker. Although the flowers of Ghent Azaleas do not possess the rounded outline of many other species their beautiful Honeysuckle-shaped trusses easily hold their own in point of attractiveness, and are much prized for use in the house; though, unfortunately, if cut with long stems the flowers quickly fade, but if used with only 2 or 3 inches of stem but little fault can be found with them on that score. The bushes are apt to become straggling if special attention is not given to them. A frequent cause of their doing so is pure starvation. In the first instance they are planted on beds which are raised too much, the consequence being the bushes suffer through drought in summer time, and the soil gradually crumbles away, leaving the surface roots bare, stunted growth inevitably follows, and what little is made by the natural laws which govern the circulation of sap is produced at the extremities of the shoots only.

To remedy this state of affairs the beds ought to be only slightly raised, and should the situation be a low damp one, effectually drained. Given strong healthy plants to start with, good health may be maintained by annual top-dressings, which keep the surface roots active and induce shoots to spring from the base of the bushes. When they are thus maintained in a healthy condition Azaleas will bear pruning to keep them in shape. This may be performed directly the flowers have faded; all that is necessary is to cut back straggling shoots to a point where there is a young growth. A little annual attention, and this kind will keep all within due bounds without sacrificing much of the next year's flowering wood.

When Azaleas are in an unhealthy condition it is not a good policy to prune them, as they seldom break well under such condition. They should first be improved in health by giving a top-dressing of sweet leaf soil, having regular attention in the matter of watering during bright weather, and then if the growth

made shows signs of improvement be shortened the following season. Bushes that fail to show improvement when top-dressed ought to be lifted during the following autumn or spring, then if planted in compost of turfy loam and leaf soil in equal parts, a marked improvement in their condition will assuredly follow.

Few shrubs will bear lifting and replanting so well as these Azaleas. We have a large bed which was so treated about the middle of March. The plants now in full flower, and do not show the slightest signs of having been disturbed, and the growth being made is as strong and healthy as anyone could desire. There is no valid reason why these delightful flowering shrubs should not adorn the shrubbery of British gardens, but where the natural soil is unsuitable for them, if planted in peat success in their culture may be assured.—H. DUNKIN.

TRUE AND FALSE WIREWORMS.

GARDENERS occasionally ask me questions about "wireworm" in some perplexity, evidently doubtful whether they know this insect so as to identify it, though they may experience the mischief it does. It is a name of terror certainly, and no wonder. Of all



FIG. 61.—DENDROBIUM DELLENSE. (See page 586.)

the destroyers of roots and underground stems none can be said to rival it, not even the most ravenous of underground caterpillars, as what this insect consumes represents but a small part of the damage caused by its subterranean operations amongst plants. Again, though small in size it feeds a long time before it reaches maturity. From three to four years is its period of growth, varying with the seasons and the nature of the food. Some gardeners who are aware of this fact wonder how it is the beetle into which it develops appears every year—that is, some species or other of the Elater, Skipjack, or Clickbeetle; but this is easily explained. The beetles we shall see in 1894 are the progeny of those that were abroad in 1890, and they will deposit eggs which will, unless the grubs are killed, produce beetles in 1898 or 1899. Next year there will be out the descendants of the brood of 1891, and thus the succession is kept up, there being grubs every year of all sizes. Wiry and tough the wireworm is indeed, especially after it has passed the juvenile period. A roller may pass over its body yet do no harm, and a digging implement fails to cut it through.

It is advisable to know the difference between the true and the false or supposed wireworms. The name has been given by mistake to various species, even to some caterpillars, but chiefly to the crane-fly grub or Tipula, and to some of the centipedes. In cylindrical form and toughness of skin all these have a certain resemblance to each other, and their mode of life is similar, but we can at once separate them by inspecting their legs. Centipedes have numerous legs, if not a hundred in all instances, at least a score or two. Larvæ of crane-flies or Tipulæ have no legs; being maggots, their movements are performed by the aid of minute hooks along the body.

True wireworms, which are the larvæ or grubs of some species of Elater or Clickbeetle, possess six short legs attached to the front segments. All of these insects, though not akin, are alike in their preference for a moist soil, but wireworms and millipedes are most generally distributed; the crane-fly grubs are less usual in gardens,

and when found in them have often been introduced with grass sods or earth brought from fields, which they specially haunt. It is the habit of the wireworm, however, to descend deeper into the ground than does the crane-fly maggot. Rolling the soil, in the case of both insects, though it does not in itself hurt them, is of service, under some circumstances, as it interferes with their freedom of movement; also just the opposite plan, breaking it up during dry weather, when the insects are more easily reached by their natural enemies, or they may be destroyed by some application.

Baits of sliced Carrots or Potatoes will capture wireworms, centipedes also sometimes, but do not seem to entice the crane-fly or Tipula maggot. This false wireworm is just now attacking Peas in some places, and needs looking after; a spring dressing of quicklime, soot, and wood ashes dry, and in equal proportions, has been found serviceable. A friend had suffered much with his Tomatoes from the true wireworm this season, and applied successfully a mixture of 2 ozs. petroleum to a gallon of water. No doubt sprinkling the surface with soot and salt is of use, alkalis being unpleasant to the wireworm. Soda-ash is effective, but gas-lime has been known to fail.—ENTOMOLOGIST.

PLANTS FOR HOUSE DECORATION.

IN dealing with the above subject one must remember that it is somewhat unlimited, for innumerable plants may be used for house decoration. I shall, therefore, only touch on those which I consider the best for the purpose. Ornamental foliage plants are much more extensively used than those which flower, but I will give lists of the most suitable of both kinds, either to be used as single specimens or for grouping.

FOR HALLS, CORRIDORS, AND STAIRCASES.

There are no plants grown I believe that are so largely employed for decorative purposes as Palms, and certainly few that will give such an effect when grouped in the hall or on the staircases. Among the best will be found *Latania borbonica*, *Kentia Forsteriana*, *Chamærops humilis* and *excelsa*, *Rhapis humilis*, *Phoenix*, *Arecas*, and *Thrinax* in variety.

Dracænas may also be utilised, and of course for the hall and corridors the greenhouse varieties will be found to stand the dry atmosphere better than the stove kinds, although these may be used with advantage in sheltered nooks and corners either singly or in conjunction with other foliage or flowering plants. A few useful greenhouse varieties are *D. australis*, *D. congesta*, *D. indivisa*, *D. lineata*, and *D. rubra*. The stove sorts include *D. Cooperi*, *D. Goldiana*, *D. regina*, *D. Guilfoylei*, *D. Lindenii*, *D. terminalis*, and many others. *Ficus elastica* and *elastica variegata* make a good effect with their large glossy leaves, and when in pots from 4 to 6-inch they can be placed in vases or stands. *Curculigo recurvata* looks very well indeed, especially when used with the other foliage and flowering plants, and it has the advantage over Palms in being easily propagated by offsets, and growing to a suitable size in a short time. Crotons are very ornamental, but I do not recommend them being largely used. If the halls and corridors are heated a short stay will not do a great deal of harm, but gas is injurious to them.

Cyperus alternifolius and *variegatus* are pretty plants suitable for the edges of the larger groups or as single specimens. *Pandanus Veitchii* is another plant well adapted for standing in vases, especially when of fairly large size. *Aspidistra lurida variegata* must rank as one of the hardiest and most useful decorative plants we have, its ability to withstand the effect of gas being alone sufficient to recommend it to all gardeners who have anything to do with house decoration. *Grevillea robusta* with its Fern-like foliage presents a light, graceful appearance, and is effective when associated with other plants. *Acacias*, *Aralias*, *Aucubas*, *Myrtles*, *Euonymuses*, and *Veronicas* may be employed with advantage, and even where gas be used the plants can be utilised. Many kinds of Ferns are indispensable, and of Tree Ferns *Dicksonias antarctica* and *squarrosa*, with *Cyathea dealbata*, according to their size, may be used as single specimens, or mixed with the groups of Palms and other plants. Many different species and varieties of stove, greenhouse, and hardy Ferns are adapted for this work, but these are too numerous to mention. Those most extensively used are the varieties of *Adiantum* and *Pteris*.

I will now mention a few of the most suitable flowering plants, bulbs, and shrubs. Of course it will depend on the season as to what kind of flowers should be used. If, for instance, it is in November, what more beautiful plant could be arranged, and with more effect, than the *Chrysanthemum*, especially when used with the Palms and other foliage plants? *Camellias* in variety, winter-flowering *Carnations*, *Epiphyllums*, *Primulas*, *Cyclamens*, *Salvias*, *Mignonette*, *Zonal Pelargoniums* specially prepared for the winter, *Arum Lilies*, *Roman Hyacinths*, and *Solanums* (berries) are all gay, and will maintain a bright appearance until well into the New Year. At that period *Azaleas*, *Cytisus*, *Hyacinths*, *Deutzia gracilis*, *Spiræa japonica*, *Narcissi*, winter-flowering *Begonias*, *Laurustinus*, *Lily of the Valley*, *Heaths*, *Abutilons*, and *Amaryllis* will be forthcoming. Spring will bring forth an abundance of *Dielytras*, *Tulips*, *Roses*, *Cinerarias*, *Imantophyllums*, *Primroses*, *Hydrangeas*, *Calceolarias*, *Lachenalias*, *Epaeris*, and *Rhododendrons*, all of which are most effective. In the summer there will be *Fuchsias*, *Begonias*, *Campanulas*, *Petunias*, *Phloxes*, *Liliums*, *Cockscombs*,

Celosias, *Heliotrope*, and a host of other flowering plants to carry the decoration until the *Chrysanthemums* are again in bloom.

FOR PEDESTALS, VASES, AND STANDS IN ROOMS.

For these we have a large assortment of plants, both foliage and flowering, from which to make a selection. Gardeners should not study what they like, but rather what will please their employers. Some persons admire flowering and foliage plants in combination, and certainly, in my opinion, this is as it should be. Still, others prefer principally foliage, and not a few must have all flowering plants.

A selection of the most graceful Palms will be found necessary, and one must be guided by the size of the vases and the positions they occupy. *Cocos Weddelliana* will surely rank first among Palms, but *Areca lutescens*, *A. Baueri*, *Euterpe edulis*, *Chamærops humilis*, *C. excelsa*, *Seaforthia elegans*, and many other Palms will be found to give a good effect and stand the atmosphere of the rooms fairly well. Ferns are favourite plants, and when grown well and hardened in a cool and dry temperature, will sometimes last for months together, especially if in a favourable position with an average amount of light. Among the best are *Adiantum cuneatum*, *A. pubescens*, *A. gracillimum*, *A. capillus-Veneris*, *Asplenium bulbiferum*, *Davallia canariense*, *Blechnum coreovadense*, *Cheilanthes elegans*, *Dicksonia antarctica*, *Lomaria gibba*, *L. gibba crispa*, *Microlepia hirta cristata*, *Nephrolepis exaltata*, *N. tuberosa*, *Onychium japonicum*, *Pteris cretica*, *P. cretica albo-lineata*, *P. serrulata*, and *P. tremula*. *Dracænas* will here again prove useful, and the greenhouse species will stand a long time in good condition—viz., *D. australis*, *D. congesta*, *D. indivisa*, and *D. rubra*. The stove varieties should be changed oftener—*D. Cooperi*, *D. Goldiana*, *D. Baptisti*, *D. Lindenii*, *D. regina*, and *D. terminalis* are excellent decorative plants. *Aspidistra lurida* and its variegated form must also be reckoned amongst the best plants for room decoration. *Grevillea robusta*, as before remarked, is very ornamental and distinct, and is also easily raised from seeds. *Pandanus utilis* and *Veitchii*, *Ficus elastica*, *F. elastica variegata*, *Aralia elegantissima*, *Asparagus plumosus*, and *A. plumosus nanus*, ornamental foliage *Begonias*, *Crotons* in variety, *Cyperus alternifolius* and *C. alternifolius variegatus*, *Aralia Sieboldi*, and *A. Sieboldi variegata* might also be employed.

Of flowering plants for the purpose of associating with the above mentioned, *Bouvardias* in variety are always much admired, as are *Spiræa japonica*, *Lily of the Valley*, *Arum Lilies*, *Carnations* (especially the *Souvenir de la Malmaison* varieties), *Primula sinensis* in variety, *P. obconica*, *P. floribunda*, *Begonias* in variety, *Deutzias*, *Dielytras*, *Gardenias*, *Eucharis amazonica*, *Amaryllises*, *Pancratium fragrans*, *Gloxinias*, *Hyacinths*, *Heliotrope*, *Campanulas*, *Pelargoniums*, *Fuchsias*, *Cinerarias*, *Petunias*, *Musk*, *Cyclamens*, *Hydrangeas*, *Gladioli*, *Celosias*, and *Abutilons*. To these could be added many more, and by studying our employers we can find out in what direction their taste lay, and grow extensively what we know will please them.

If there are window boxes in the rooms, or corners where plants are grouped, *Selaginellas*, *Panicum variegatum*, and *Tradescantias* will have to be grown, and are best in small pots. *Coleus*, which I had forgotten to mention, will come especially useful for window boxes in conjunction with Ferns and flowering plants.

DINNER TABLE DECORATION.

For dinner table decoration where plants are used alone, a large assortment of both foliage and flowering plants will have to be grown, and in suitable sized pots for the purpose. For the centre of the table Palms of a graceful habit will be most largely used, and the following are suitable varieties, as they can be kept in good condition for a long period in from 3 to 4-inch pots—*Cocos Weddelliana*, *Areca lutescens*, *A. Herbstii*, *Euterpe edulis*, and *Geonoma gracilis*. *Grevillea robusta* might be utilised for this purpose, as can be some of the *Dracænas* and *Asparagus plumosus nanus*. Smaller plants are employed as a groundwork for the centre one, and for dotting about the table in pairs and fours. Those suited for this purpose are *Caladium argyrites*, *Coleus*, *Pandanus*, *Dracænas*, Ferns, *Selaginellas*, *Panicum variegatum*, and *Isolepis gracilis*. Among flowering plants to be used in conjunction with the above foliage plants grow *Gloxinias* of the erect flowering type, *Begonias*, *Cyclamen*, hybrid *Streptocarpus*, Chinese *Primulas*, *Primula obconica*, and *P. floribunda*. The last two can also be had in flower all the year, and all I have mentioned make good plants in from 2½ to 4-inch pots. Through the winter and spring the following bulbs may be employed—*Roman* and other *Hyacinths*, *Crocus*, *Tulips*, and *Jonquils*. —PERENNIAL.

(To be continued.)

RIPENING AND PRESERVATION OF FRUITS.

[By DR. G. C. CALDWELL, Professor of Chemistry, Cornell University. Read at the annual meeting of the Western New York Horticultural Society, January, 1894.]

THE decay of fruit is the final ending up of a series of chemical changes, the beginning of which is away back at its first appearance after the flower withers and dies. The green fruit behaves like a green leaf; it takes up carbonic acid from the air and water from either air or soil, and gives off oxygen, and makes what we call vegetable substance, such as the cellulose of the walls of the multitude of very little cells or chambers of which the fruit is built up, and which increase in number and size as the fruit grows, as we make a house larger by adding on more rooms, or adding to the size of those that we already have. Then, in these cells, other vegetable substances are stored, such as starch, fats,

acids, pectin bodies, tannin, albuminoids and so on—perhaps not all of them in the very youngest fruit, but all of them, sooner or later, and others besides.

But, in the building up of the fruit, and stocking its multitude of cells, the fruit itself is by no means required to do the whole of the work; it receives help from the other green parts of the plant, whether a shrub or tree, or a mere garden plant like the Tomato. In the case of real fruits the most interesting stage of chemical change is that of the ripening period, during which the fruit changes colour, becomes softer, usually sweeter and less astringent or puckering. The fruit loses its power more and more as the departure from the original leaf-green colour widens, of making the material for its own growth out of carbonic acid and water, and such matters as are drawn from the soil; and instead of taking up carbonic acid and giving off oxygen, it comes more and more to behave like animals in their respiration. It takes up oxygen and gives off carbonic acid, and it comes to be entirely dependent on the green parts of the plant, the leaves, for whatever more it may need for new building material, or of material to put into its cells. This process of respiration in animals results, as you know, in a slow burning up of certain substances in the body. Heat is a product of the operation, as heat, more or less intense, is a product of all burning, whether slow or fast; if slow we may see no fire, but there is heat nevertheless, and it is this heat that makes the living animal body warm. So, if the ripening fruit takes up oxygen and gives off carbonic acid, a slow burning must take place in it also; tannin is probably burned first, or is among the first substances to be destroyed; the puckery character of the fruit gradually lessens, and finally disappears altogether, as one of the important phases of the ripening. This is true, at least of the Grape, and in all probability of fruits in general.

Insoluble pectose substances change to soluble and the fruit becomes softer, especially towards the end of the ripening process. The proportion of albuminoids increases, and consequently the fruit becomes more nutritious. The most important changes that take place, however, are in respect to the sugar and the acids. These changes have been studied more than any others, for upon the relative proportions of these two constituents, as well as on those subtle substances that give aroma and flavour, the eating qualities of the fruit depend altogether. The proportion of sugar increases from the beginning—sometimes steadily, as in the Peach and Strawberry. In the Gooseberry and Cherry a sudden increase has been observed at just about the time when there is a correspondingly rapid growth in the size of the berry. In the Grape the sugar increases rapidly also through a certain period, which some investigators make out to be longer than others, and some make later in the season than others do.

The proportion of acid also usually increases through at least a large part of the period of ripening; but in the case of some fruits it afterwards falls off, and in some cases, as in the Strawberry, it may rise again. In the Grape the acid seems to diminish steadily, and it has been supposed that it was converted into sugar—a change which, though not possible in our chemical laboratories, may be brought about in the plant's laboratory. But it is not probable that this is the source of the sugar. It has been fairly proved that sugar is transported into the fruit in the current of sap from the leaves, and it is generally believed that when the acid increases too, it also is carried into the fruit from without.

While, in the Grape, the greater sweetness of the ripe fruit, as compared with that which is only partially ripe, may be due to the lessened proportion of acid, as well as the increased proportion of sugar, it is evident that this cannot be the case in those fruits whose acid increases as the ripening progresses. The ripe fruit is sweeter only because the sugar increases more rapidly than the acid does.

As fruits differ in their method of ripening before being plucked, so do they differ, and much more, in their methods of after-ripening, when detached from the plants on which they grew. All fruits undergo a certain amount of ripening on the tree or Vine; but some ripen no further when detached therefrom, while others need to be picked before fully ripe in order that we may finally have them at their best. As to the Grape, the best authorities find no after-ripening, or no chemical change taking place that makes the fruit better; others find some diminution of the acid, without any loss of sugar, which would make the fruit sweeter. But I do not know that anyone will affirm that the Grape is ever better than when fully ripened on the Vine, or that the Strawberry, Raspberry, or Blackberry is improved by keeping in storage. But, on the other hand, we all know that the Pear is spoiled if allowed to pass a certain stage of maturity on the tree. What this deterioration consists in has not, so far as I can learn, ever been ascertained. The Apple comes in between these two extremes. We can enjoy it in summer or autumn if freshly plucked when fully ripe, and can store our winter varieties quite uneatable when picked, to go through a process of after-ripening in our cellars or fruit houses.

This after-ripening of the Apple has been somewhat extensively investigated. The most reliable results show that there is no increase in the sugar; that is, no sugar is formed, in addition to what was in the fruit when picked. There are many kinds of sugar, with two of which all of us are acquainted—ordinary cane sugar and glucose. The latter is much less sweet than the former. In this after-ripening of the Apple, much over half of the cane sugar was, in one series of tests, changed to a less sweet sugar, not entirely glucose, but a mixture of that with still another sugar, levulose. This was an average result obtained on twelve varieties of Apples, kept six months. While some

other investigators found a slight gain in sugar as a whole, all agree that the acid diminishes, and hence the fruit may in any case become sweeter. As to the sugar and acid in the Pear, the changes are about the same as in the Apple, so far as the very meagre investigations of the subject inform us.

(To be continued.)



CODDLING CHRYSANTHEMUMS.

AS a grower of Chrysanthemums, and fond of experimenting, I can endorse all that Mr. H. Dunkin said on page 341 of the *Journal of Horticulture*. That many cultivators coddle their Chrysanthemums too much there can be no doubt. I have frequently seen cuttings rooting in stove heat, and the plants growing in a warm temperature until the spring. Can it be surprising that the plants under such conditions become tall—much too tall—and unsightly? Last week I noticed a large number of Chrysanthemums in a greenhouse when they would have been better outdoors.

It is quite probable, as Mr. Dunkin says, that cold cutting winds do more harm to the plants than slight frosts. This, at least, has been my experience, and doubtless other readers could record similar instances. At one time I was very slow in placing Chrysanthemums outdoors until May had set in, but now I put all in a sheltered position in April, affording some slight protection from frosts and easterly winds.—GROWER.

THE NATIONAL CHRYSANTHEMUM SOCIETY.

THE very considerable attendance of members at the special meeting of this Society held last week, and of which you furnished a report, shows clearly that the question of judging of Chrysanthemums is one that has for all considerable interest, though to those who are growers and exhibitors no doubt it is of interest in the highest degree. But the National has in its ranks not only the largest number of exhibitors of any other Chrysanthemum Society, but probably also of men selected here and there to act as judges, and to these very specially the subject of discussion was one that commanded their closest attention.

Whatever may be the outcome, not only of Mr. C. E. Shea's admirable paper, but also of the discussion consequent upon its reading, at least it is certain that very much will have been accomplished in the direction of educating growers and judges in what are not merely the requirements of good blooms, but also on what principles the merits of blooms should be appraised. Even if it be not possible to secure absolute unanimity in judging, at least very much towards that desirable end will have been accomplished. I very much sympathise with all those members of the National Chrysanthemum Society present at last week's meeting who, having ideas or views, and desirous of expressing them, yet found innate shyness or want of speaking experience to fail them just then.

A discussion arising from out of Mr. Shea's paper and of the meeting referred to may be opened in your columns. Such discussion can hardly be other than helpful to the Executive Committee, to whom the entire subject has been referred. We have now reached a stage in Chrysanthemum exhibiting when the principle on which flowers are judged should be as clearly defined as conditions will permit, and in that way alone can we hope to have such comparative unanimity of awards as shall secure for them everywhere complete acceptance.—A. D.

JUDGING CHRYSANTHEMUMS.

AS notified in the *Journal of Horticulture* last week, a meeting of the members of the National Chrysanthemum Society took place at Anderton's Hotel, Fleet Street, on the 7th inst., when Mr. Shea's paper on "Judging Chrysanthemums" was discussed. As stated in the report, I had the honour of opening the discussion, and was much gratified by the attentiveness of the audience, this proving to me that the subject is one of the greatest interest to all concerned. What surprised me was the almost perfect unanimity of opinion with which the principle embodied in Mr. Shea's paper was accepted as being as near perfection as possible. One gentleman said he would rather see the blooms judged on "common sense" principles than under the suggested methods, though in my opinion Mr. Shea's suggestions contain nothing but that which is common sense.

As is well known to exhibitors the two methods of judging Chrysanthemum blooms are known as point and comparison principles, and, as my writings and practice indicate, I distinctly favour the former, for the reason that under a system of point judging every bloom in a stand is appraised according to its merits on the day of adjudication. As I pointed out at the meeting referred to every judge should be in a position to give a reason for the awards made, and without adopting a method, as that advocated by Mr. Shea, I cannot see how such could be done. Unless two stands of blooms contain the same identical varieties I fail to see how comparison judging can be accurate. Where there is

a marked difference in the quality of the blooms in two or more stands a detailed system of judging is not so requisite to arrive at a satisfactory conclusion; but where the competition is keen it is absolutely necessary to examine every bloom staged to enable an adjudicator to arrive at a correct decision.

I have on several occasions found but one point, aye, and half a point, separate two stands of blooms, not merely at the first examination, but after most minutely looking for defects as well as points of excellence. Where the disparity is so trifling how can a satisfactory termination be arrived at without the adoption of a system that embraces all the points contained in a flower? Points of general quality are of but little avail in such close competition, absolute particles must be weighed to arrive at a satisfactory issue. As is generally known I am a disciple of the plan first formulated and put into print by Mr. J. Wright, and also to Mr. G. Gordon, who is a strict adherent of the same plan in cases of close competition. As pointed out I am a strong opponent to those judges who have a special weakness for any type or variety as opposed to others opposite in character. If an exhibitor stages blooms in accordance with the schedule such are entitled to an impartial examination by the judges.

Mr. Shea in his paper, spoke very strongly against making extra allowances for "novelties." With this I heartily agree, of course assuming that such blooms possess no points of advance as compared with older varieties. Because a variety is new and costly, and that is the only recommendation it has, then the awarding of extra points is a gross act of impartiality, and decidedly not fair treatment to the exhibitor whose pocket is not perhaps so well stocked as his more wealthy opponent. I am an adherent to the plan of making allowance for those kinds that are more difficult of production than others, inasmuch as a greater tax upon the skill of the cultivator should meet with its due reward.

Relative to the disqualification of duplicate blooms, I am quite in accord with Mr. Shea. No variety should be accepted as distinct until it is proved to be so. In the case of sports the only true test is by cultivating such suggested kinds in "bush" form, this being the more natural production of the correct colour of any variety; it may not in all cases be the desired colour, however. Some persons have a weakness for one shade of colouring, and some for another.

On the above mentioned occasion I endeavoured to point out, and my opinions were largely shared by subsequent speakers, the want of time to admit of a minute calculation of all the attributes as set down in Mr. Shea's table would minimise the adoption of such a plan. As the author rightly said, the use of such a table of details would be the exception rather than the rule. His object was for educational purposes, and to establish a system of canon judging throughout the operations of the National Chrysanthemum Society's scope at any rate.

As Mr. Wright remarked in the issue of the *Journal* of April 12th, giving diameter of bloom the highest consideration might lead to inconvenience at times. He there gives a table differing but slightly from that formulated by Mr. Shea, with a view of simplifying the method. While adhering to the principle, I add one more attribute to the list given both by Mr. Shea and Mr. Wright—viz., form. This is especially noticeable in incurred blooms. They both, I know, include this in their enumeration of the points, but there is no harm in giving it special prominence when the subject is thoroughly under discussion.

In formulating a plan on the same principle and adhering for the sake of similarity as to the number of points the attributes shall amount to, I propose to group them slightly different, but on the whole it is perhaps a greater simplification of details. To diameter, depth, and solidity I would apportion four points in this order: To the first two I would give $1\frac{1}{2}$ each where the maximum was attained, and to solidity 1 point. The grouping of these attributes comes as a consequence in the actual practice of judging. The diameter, depth, and solidity are all taken into consideration at the one glance by those persons who have made a practice of judging on this principle. The form, finish, and freshness would constitute another group to which might be allotted 2 points. These, again, are attributes that seem to go together. Lastly, breadth of petal and colour I would give 2 points, making the same total as in the two instances cited. It should not be understood that I formulate this plan as antagonistic to those named, but merely to provide more food as it were for those to be appointed to settle the matter finally at a later stage. Under the plan suggested all the attributes (eight) possessed by a Chrysanthemum bloom that I am cognisant of are given and accounted for. Simplicity with accuracy has been my object, and whichever method, or a combination of methods named, is adopted will meet my views. My object in taking part in this discussion has been to make the judging of Chrysanthemum blooms as near perfect as possible.—E. MOLYNEUX.

GARDEN WALKS AND EDGINGS.

A PRACTICAL article on this subject appeared in the *Journal of Horticulture* for February 1st, and I venture to supplement those remarks. The subject is of some importance, and to some extent an impressive one.

I admire the Box edgings, though they shelter the enemy, yet do not attempt to minimise nor lightly condemn the lurking powers of evil which bide therein, such as slugs and the other insects known to me in the

Kentish home as "oddmadods." afterwards in Gloucestershire as "horny-dornies." As remarked the Box edging I admire so much that I feel equal to a boxing contest in defence of the lowly evergreen, so cheerful at all times, and so beautiful at present in its fresh young growth. Evict the enemy by razing his dwelling. I think he is quite capable of seeking fresh lodgings. Yet my thoughts on this section of the subject are confined exclusively to those gardens in which ornament is of equal consideration with utility. Where much heavy work has to be done and appearances maintained; where the latter is not considered then I cordially agree with the writer, but in the combination requirement I would say find me a substitute. Till then the Box remains, and of course the "varmint." Now this Box, so much admired, may I describe it? It is 6 inches high, 6 inches wide, square clipped and solid. And about the slugs, well, blackbirds and thrushes are hopping along the rows to their own music, and helping themselves to that food thus provided.

But I am off round the winding walks of the shrubbery, and why do they wind? Oh, well, some of them have to avoid that tree, this clump of shrubs, and the bed of Rhododendrons. Sensible winders these, with beauty in their curves, because it is patent to all there is meaning and purpose in it. Those which wind and meander aimlessly with no object in existence but to be swept and kept are different. Even the man who mows the grass, and ought to know better, takes short cuts and solves the problem of the shortest distance between given points. These flights of fancy it would, "better late than never," be as well to provide with an object in life by planting a tree at that bend, a clump at this curve, and so on, not forgetting a good prickly Holly or other armoured bush at the junction.

About width? I would crave room, ample room for all purposes, and especially for appearance. A wide walk gives dignity to the garden, to which I have cantered back. It may be thought appearance goes a long way with me; but we cannot afford to despise it. With our employers and their visitors the Indian file fashion of walking is not in favour, and when we gardeners meet "his honour" escorting friends round the garden we feel neither happy nor graceful in having to stick one leg into the herbaceous border to allow them to pass. My ideal walks are 10 feet wide, and so satisfy the eye that I would neither give nor take from them. The half-inch gravel from the seashore lately put on looks bright and clean, but will not bind.

On the question of making? Make them for all time and generations to come will bless you. On keeping?—meaning much to gardeners—by their walks shall ye know them.—E. K., *Dublin*.

SYRINGING "MALMAISON" CARNATIONS.

THIS discussion is now becoming interesting, and, I trust, instructive, because we are obtaining the opinion and finding out the cultural practices of growers in various parts. This, I am sure, is what readers require, for not a few of them are anxious to obtain additional knowledge bearing on the subject, and any information that will help toward securing better results among a wider circle of growers will be welcomed by none more than myself. It so happens, however, that both your correspondents who on page 367 are pinning such unbounded faith on the non-syringing system, advanced no logical arguments in support of it. Mr. Elliott is of opinion that by "placing the plants nearer the glass and exposing them to more light and air the disease will soon disappear." What a simple remedy; but, alas! how many gardeners have followed the practice to the letter and yet seen their plants gradually dwindle away.

Mr. Hamilton has in the succeeding paragraph adopted a somewhat dogmatic and positive style. He gives as his opinion that the syringing system is wrong, and the non-syringing right, just as if the culture of any plant could only be successfully carried out in one way, no matter how varied the conditions might be. This is retrogressive teaching. Then again he tries to prove too much when he says, "I know some small growers who have their 'Malmaisons' very fine, but never syringe," others buy clean plants, place them in good houses, but fail to keep them free from spot because they syringe." Surely this is a little too sweeping, as there are many plants which are never syringed, yet fall a prey to spot; and on the other hand hundreds of fine plants are grown where judicious syringing is practised. For the same reason his quotation from a trade grower's letter does not count, as I am also acquainted with one who has grown largely for the trade, and during the season that he grew the finest plants, syringing was regularly practised.

It is going beyond all reasonable argument to assume that "Malmaison" Carnations, or any other plant for that matter, will be hurried to a premature death by syringing the foliage. Do not all plants when growing under natural conditions receive copious "syringing" in the form of rain which bring them renewed vigour? It is only when we have incessant rain and an absence of sunshine that plants or crops show any ill effect; it is exactly the same with the practice of syringing. Carried out with intelligence it is a great cultural aid in securing the best results, but when practised without discrimination it may prove almost as disastrous as over-watering. It is in the medium between the two extremes that the course best suited to the requirements of the majority of growers will be found, and those who on the spur of the moment doubtless feel as well as state that disaster must attend cultural practices which are at variance with their own only show that they have allowed their prejudice to blind, or their imagination to "run away" with their reason.—H. DUNKIN.



EVENTS OF THE WEEK.—The great horticultural event of the ensuing week will be the Exhibition held in the Inner Temple Gardens, under the auspices of the Royal Horticultural Society, on the 23rd, 24th, and 25th inst. As mentioned in another paragraph the Show is to be opened at 12.30 P.M. on the 23rd by H.R.H. the Duke of York, and, as usual, a magnificent display is anticipated.

— **THE WEATHER IN LONDON.**—A change in the weather has occurred since publishing our last issue. Towards the end of the week it was dull, cold, and wet; but Sunday proved bright and warm. Monday also was fine, Tuesday being dull and sultry, rain falling in the evening; Wednesday also opened mild and dull, and at the time of going to press it is raining.

— **TEMPLE FLOWER SHOW.**—For the seventh year the Royal Horticultural Society will hold its great annual Flower Show in the Inner Temple Gardens on May 23rd, 24th and 25th. H.R.H. the Duke of York will open the Show on Wednesday May 23rd at 12.30. The band of Her Majesty's Royal Horse Guards (Blues), under the direction of Mr. Chas. Godfrey, R.A.Mus., will be in attendance each day. So far all the arrangements for the Show have been completed, the one thing now necessary being fine weather. Any intending exhibitors who have not yet sent in their names, should do so at once to the Secretary R.H.S., 117, Victoria Street, S.W., otherwise they cannot appear in the official catalogue.

— **HORTICULTURAL CLUB.**—The usual monthly dinner and conversazione took place at the rooms of the Club on Tuesday evening in last week. The chair was occupied by Mr. John Lee, and there was a large attendance of members, amongst whom were the Rev. F. H. Gall, Messrs. C. E. Shea, H. J. Pearson, H. S. Leonard, G. Paul, C. E. Pearson, Francis T. Rivers, C. T. Druery, Edw. Cockett, Geo. Bunyard, J. Rivers, and H. J. Seebohm. The subject for discussion was the "Arctic Flora," which was opened with a deeply interesting paper by Mr. H. J. Seebohm; an animated discussion took place afterwards, very opposite opinions being expressed as to the distribution of the plants forming the Arctic Flora; and a vote of thanks was accorded to Mr. Seebohm for his valuable paper.

— **SOUTH AFRICAN GRAPES.**—Many consignments of Grapes from the Cape have been imported since last December, the Union and Castle lines both having fitted their steamers with the requisite cool chambers. The Grapes are sold retail at Covent Garden at an average of 1s. 6d. per pound for the white, and 2s. per pound for the black, when English hothouse Grapes are worth from 3s. to 4s. per pound. They are grown at two or three places near Cape Town, one farm, at Hex River, about sixty miles inland, consisting of 2000 acres of Vines. A further improvement in quality may be expected, and a rapid extension of trade will doubtless be the result.

— **LILY OF THE VALLEY IN WOODS.**—"J. R. S. C." writes: "Some notes appeared in the *Journal of Horticulture* recently concerning the occurrence of the Lily of the Valley seemingly wild in England. Several acres in Darenth Wood, near Greenhithe, are covered with it, the ground being rather below the level of the rest of the wood. Several times I have been over in the spring, hoping to procure flowers, but was each year too late, or at least I supposed so; but I am now told by a person acquainted with the spot, that the plants very rarely bloom, some years not a flower will be found, average seasons only a few. Yet the distribution of the species over so large a space might be taken to indicate that it had at some period flowered freely."

— **THE HYBRID GLOXINIA.**—The very interesting plant shown at the Drill Hall on the 8th inst. by Messrs. Veitch & Sons of Chelsea, the product of a cross between a Gesnera and a Gloxinia, possibly led some who saw it to remark that it did but show the Gloxinia in its old form of producing pendent flowers. To some extent that was true, but there was a richness of colour in the flowers not hitherto seen in pendent Gloxinia blooms, with also a promise of still richer and deeper colouration such as makes Gesnera zebrina so attractive. But the best feature of the plant without doubt was found in its

shorter, rounded, and very abundant leafage. In that respect there is promise of improvement that cannot fail to be regarded with satisfaction. Gloxinias at present have rather gross leafage; we could very well dispense with so much luxuriance, especially when it is needful to carry the plants to shows. Presently no doubt erect flowers will come, and then we shall have a strain of Gloxinias that will be nearly perfect.—A.

— **IMPORTATION OF POTATOES AND ONIONS.**—We learn from the official returns that during the past month only 37,055 bushels of Potatoes were imported, against 211,022 bushels in April, 1893. The importations of Onions amounted to 529,416 bushels of the value of £82,569, against 291,828 bushels of the value of £70,099 last year. It is stated that in the four months ending with April, we paid £265,074 for Onions imported from foreign countries.

— **IMPORTED FRUIT.**—According to the Board of Trade returns the importations of Apples received during April were 104,819 bushels, of the value of £36,623. The imports of Plums amounted to 100 bushels, of the value of £200; of Pears, 1716 bushels of the value of £489; of Grapes, 933 bushels of the value of £1010. There has been a decline of unenumerated fruits, the amount imported in April, 1894, 34,559 bushels, against 31,315 bushels during the corresponding month of last year.

— **PLUM GROWING IN AMERICA.**—Californian fruit growers state that the trees in a ten acre Plum orchard, and only four years old, near Visalia, have near the ground an average of 16 inches in circumference and an average height of 20 feet. Certainly, says an American contemporary, this cannot be excelled, if even reached by some of the most successful Plum growers in England. The same paper, remarks Professor Munson of the Maine Agricultural Experiment Station, says that Plum growing, once abandoned in the Penobscot valley, is again being profitably undertaken in some portions of the State.

— **THE PLANTING OF CITY SPACES.**—In the current number of "The New Review," the relative value of trees for the purposes of City cultivation is treated of by Sir Herbert Maxwell. London, of course, is taken as the ensampler. In it he asserts no trees have been found to bear the trying conditions of impure atmosphere and rubbishy soil better than the Mock Acacia (*Robinia pseud-acacia*) and the Maple-leaved Plane (*Platanus acerifolia*). Next to these come the Ailantus glandulosa, the Lombardy Poplar, and the Maidenhair Tree (*Salisburia adiantifolia*). He remarks that coniferous evergreens have absolutely failed to stand the test, as have also Hollies. Other trees, such as the Lime, the Elm, and the Ash, have grown, but the results in respect of their foliage do not justify their further introduction. Of smaller plants, Sir Herbert Maxwell advocates the diffusion of the Virginian Creeper, the Fig, and the *Euonymus radicans* (plain-leaved variety), while he deprecates the multiplication of the Aucuba and the Rhododendron. We recommend the perusal of this article to our readers.

— **THE ORIGIN OF CULTIVATION.**—In the "Fortnightly Review" for the present month, Mr. Grant Allen, in his peculiarly clear and tasteful style, prefers a theory regarding the origin of cultivation. He dilates upon the enormous mental obstacles primitive man must have had to overcome before he could grasp the connection between the seeds of plants and the vegetation arising from their germination beneath the soil. In us, he says, long familiarity with the operations of husbandry has begotten a contempt of any such difficulty; but reflection will show us that for a creature, half animal, living precariously on roots, berries, grubs and shell-fish, to succeed in connecting the two ideas is little short of miraculous. Indeed, so wonderful is it that the only explanation Mr. Allen can give is that it was an accidental outcome of the savage custom of funeral rites. In burying the body of a chief with him were also entombed fruits and cereals to feed him in the hereafter and slaves to wait upon him. Such sacrificial obsequies still survive among the African peoples to the scandalising of European explorers. It would gradually be observed that fertility resulted from these holocausts, and the sacrifice of human life would therefore come to be regarded as an indispensable concomitant of agricultural operations. Mr. Allen also cites numerous instances which seem to him to be survivals of this practice of consecrating husbandry by means of human or (later on) by animal blood. Among many peoples, especially the Khonds of Orissa in India, it was the custom to rear victims predestined for this purpose, who were treated with extraordinary kindness, in the belief that their spirits would, after sacrifice, operate propitiously on the crops. Mr. Allen makes out a very plausible case, which is worth studying, and will give food for reflection to those who take an interest in archæology.

— SWEET-SCENTED AZALEAS.—Mrs. E. L. H. Willis of Charleston, S.C., in "Meehan's Monthly," notes that all the American species of Azaleas, when collected together in bunches, have a more or less grateful odour. Referring to Azaleas generally she remarks that the Magnolia Gardens on the Ashley River, about thirty miles from Charleston, are visited by thousands of tourists every spring, in March and April, and enjoy possibly the many groups and masses of Azaleas in that garden more than any other sight presented to them.

— SPECIES OF PLANTS.—We are informed by "Nature" that in a paper read at the Botanical Congress at Genoa last year, Prof. Saccardo calculates the number of species of plants at present known as 173,706, distributed as follows:—Flowering plants, 105,231; Ferns, 2819; other Vascular Cryptogams, 565; Mosses, 4609; Hepaticæ, 3041; Lichens, 5600; Fungi, 39,603; Algæ, 12,178. Prof. Saccardo thinks it probable that the total number of existing species of Fungi may amount to 250,000, and of all other plants to 135,000.

— THUNDERSTORMS.—At the meeting of the French Meteorological Society on April 12th, M. Renou, President, made some interesting remarks upon thunderstorms. According to "Nature" he said that they occurred in some parts of France every day of the year, and during six or seven months in 1892 as many as 328 were counted. He remarked that they were more frequent in Europe than in equatorial regions; at Sumatra, for instance, storms occur during the six months of the south-east monsoon, but thunder is never heard. In France they generally traverse a narrow tract from south-west to north-east, but in the hot regions of the globe, on the contrary, the storms are nearly stationary. They are very exceptional in Peru, occurring only once or twice in a century; there was one in January, 1877, but none had occurred previously since 1803.

— THE CUCKOO.—Reports of cuckoos being seen and heard long before the usual date of the arrival of the bird are made every year. Generally the reports cannot be relied upon, but a circumstantial account by Dr. A. J. Fleming, in the "Zoologist" for April, goes to show that he really saw a cuckoo on March 5th of this year. The accuracy of his observations, however, says "Nature," is questioned in the current number of the journal by several naturalists, most of whom assert that March cuckoos do not exist. Mr. J. E. Harting remarks:—"From numerous observations made by competent naturalists in different localities it appears that the usual time of arrival of the cuckoo in this country is between the 20th and 27th April; and the average date of its appearance may be said to be on the 23rd of that month, St. George's Day. In no instance, so far as I am aware, has the bird been heard or seen by any competent observer before the 6th of April. . . . It is surprising how few people are to be trusted, either in the matter of eyes or ears, in regard to the cuckoo. Many do not know a cuckoo on the wing from a male sparrow-hawk, and others convince themselves that they have heard this bird's notes when they have been listening to a clever imitation by some village bird-nesting boy, or to the still more deceptive notes of a cuckoo clock in a neighbouring cottage."

— AMYGDALUS COMMUNIS AND ITS VARIETIES.—No hardy plants or trees that I am acquainted with add so much to the beauty of a shrubbery in the early spring months as do these Amygdaluses. Perhaps the most showy and useful of them all is *A. grandiflora rosea*. This variety is a free grower, and is on that account well adapted for planting as standards in the background of shrubberies, where their long slender shoots, when completely studded with large rose coloured flowers, are worthy harbingers of the wealth of pristine beauty which follows in quick succession among our flowering trees during the next few months. I find long flowering shoots extremely useful for arranging in vases, as in addition to their refreshing colours the length of stem obtainable helps to break the flatness produced by glasses filled with flowers having only short stems. These Almond flowers last well in a cut state, keeping perfectly fresh for from four to six days. I have not yet decorated a dinner table entirely with them, but I have a strong belief that it would be difficult to imagine an arrangement more suitable or beautiful. The common red varieties, *A. communis* and *communis dulcis*, as well as *pendula*, a white flowered kind, all bloom in March, but are not so attractive as the variety first named. Then there are the numerous double varieties, many of which are extremely showy. They embrace almost every shade of crimson and rose and a nearly pure white. Those who have no representatives of this family in their pleasure grounds should not longer delay themselves from the enjoyment of such a splendid species of flowering shrubs.—H. DUNKIN.

— THE WEATHER LAST MONTH.—Mr. W. H. Divers, Belvoir Castle Gardens, Grantham, writes:—"April was very changeable, but dry on the whole, and not so sunny as March. The wind was in an easterly direction seventeen days. Total rainfall was 1.28 inch, which fell on eighteen days, the greatest daily fall being 0.27 inch on the 25th. Total sunshine, 146 hours 8 minutes. Temperature: lowest in shade, 32° on 21st; highest, 73° on 11th; mean daily maximum, 54.70°; mean daily minimum, 41.66°; mean temperature of the month, 48.18°. Lowest on grass, 24° on 21st. Highest sun heat, 130° on 2nd, 9th, and 10th. Mean temperature of the earth at 3 feet deep, 46.40°."

— SUMMARY OF METEOROLOGICAL OBSERVATIONS AT HODSOCK PRIORY, WORKSOP, NOTTS, DURING APRIL.—Mean temperature of month, 48.6°. Maximum on the 11th, 72.0°; minimum on the 21st, 28.4°. Maximum in sun on the 11th, 120.2°; minimum on the grass on the 21st, 19.0°. Mean temperature of air at 9 A.M., 49°. Mean temperature of soil, 1 foot deep, 48.3°. Nights below 32°, in shade 4°, on grass 15°. Total duration of sunshine 119 hours, or 29 per cent. of possible duration; we had five sunless days. Total rainfall 2.45 inches; rain fell on sixteen days. Average velocity of wind 5.9 miles per hour, velocity did not exceed 400 miles in one day, fell short of 100 miles on twelve days. Approximate averages for April:—Mean temperature, 45.4; sunshine 123 hours; rainfall 1.65 inch. A warm showery month with normal sunshine, and a good deal of easterly wind. Vegetation forward, and most fruits very promising.—J. MALLENDER.

— DIGITALIS CANARIENSIS.—Mr. W. Watson writes in the "Garden and Forest" that this "is the garden name for a plant now rarely seen, but which was cultivated in England nearly 200 years ago, and was figured by Lindley in the first volume of his 'Botanical Register,' t. 48. I would advise anyone who wants to make the acquaintance of a striking and beautiful flowering shrub to turn to Lindley's picture of it, and then to write to someone in the Canary Islands for plants or seeds. It is cultivated at Kew, and I saw a plant of it last year in the Glasnevin Botanic Garden. It forms an upright shrub ultimately about 6 feet high, with stout woody branches bearing only a few leaves at the ends, and these are from 6 inches to a foot long, linear lanceolate and fleshy. The flowers are borne in crowded terminal erect spikes a foot long, fleshy, and coloured bright orange-yellow. It requires protection from frost. The proper name for this plant now is *Isoplexis canariensis*."

— FORCING FRENCH BEANS.—"E. M." writes:—"Those persons who have the opportunity of planting out their Beans in a low span-roofed house know well the advantage gained over the method of sowing the Beans in pots, or even boxes. In this neighbourhood (Bishop's Waltham) the market growers of Cucumbers plant French Beans in the beds with the Cucumbers, and they obtain excellent crops. The finest crop of forced French Beans that I have ever seen is growing in a low span-roofed Cucumber house at Hazelholt, Bishop's Waltham. The variety is *Ne Plus Ultra*, generally regarded as one of the best for indoor culture. The plants are growing in rows, 10 inches asunder, across a narrow bed, and but a few inches between the plants. From one plant six and seven dozen Beans had been gathered, as many as eight growing on one truss. The pods were very succulent, as might be assumed from the nature of the foliage, which was large, but not too gross, and of that tone of colour which denotes health. As an example of French Bean forcing, Mr. Hunt deserves much credit for the results obtained."

— PAPERS AT THE R.H.S. MEETINGS.—I should have been better pleased if you had pushed your remarks on Tulips (page 364) respecting papers or lectures at the Drill Hall to a stronger conclusion. Negatively you do complain that the recent Show of Tulips was not utilised for the purpose of enabling visitors to the meeting to be made more fully acquainted with the properties of Tulips. It was worthy of more than a negative complaint, seeing that the promised lecture on Orchids had fallen through. But it would be so much more interesting and pleasing were there made to be on as many occasions as possible greater connection between the actual exhibits and the papers read at the meetings. For that reason it is natural for many persons to recall the delightful gossip dissertations on the various things exhibited that used to mark the old meetings at South Kensington. Not one, but two or three persons might well be asked to say a few words about respective sections in plants, flowers, or other products, and thus utilise exhibits for illustration. How very much more interesting and attractive would be such addresses as compared with the often heavy essays now inflicted.—A FELLOW.

— THE KEW GUILD.—We have received the second number of the "Journal of the Kew Guild," which contains much matter of interest to past and present "Kewites." A portrait of Sir Joseph Dalton Hooker is given as a frontispiece, accompanied by a short sketch of his life. Mr. John W. Thomson, who it is stated is the only man living that was connected with the Royal Gardens in the reign of George III., gives some "Reminiscences of an Old Kewite," and his portrait adds interest to this record of the past. Mr. Thomas Meehan describes "Kew, as I Knew it, Nearly Fifty Years Ago," while Mr. Robert Cameron, Botanic Gardens, Harvard University, Mass., America, expatiates on "Gardeners' Prospects in the United States." In addition the names and addresses of past and present "Kewites" are given, also some miscellaneous notes, from which we extract the four paragraphs that follow.

— THE RHODODENDRON DELL.—From the landscape point of view the great defect of Kew is its flat, unbroken surface. The only diversities of level of any importance are the Wild Garden near the Cumberland Gate and the Rhododendron Dell in the Arboretum. Both of these are artificial, and according to the "Historical Account of Kew" ("Kew Bulletin," December, 1891), the latter was made during the reign of George III., between 1760 and 1771, by the Staffordshire Militia, then quartered at Kew. It is now one of the prettiest parts of the Garden, and its interest and beauty have recently been much enhanced by the thinning out and replanting of many of the Rhododendrons, as well as by the introduction of several scores of the best and newest varieties. In addition to the better-known garden kinds the collection comprises all the species that are sufficiently hardy to be grown outside at Kew. There are also several beds of Camellias in this Dell, and these this spring have flowered with unusual freedom, having escaped the damaging effects of spring frosts, of which we have had little this year.

— THE COLLECTION OF OAKS at Kew has much improved during the last few years, not only by the addition of a number of rare species and varieties, but also in the improved appearance and health of the older specimens. Owing, it may be, to the unsuitable character of the soil, many of the Oaks at Kew have a strong tendency to become flat-topped and stunted, and to develop a dense twiggy growth rather than clean, strong branches. Experience has proved, however, that this tendency may be almost entirely overcome by pruning and manuring. The question of tree-pruning has been discussed a good deal lately, but the mistake is frequently made of confounding the treatment of isolated specimen trees in the garden or park with that of forest trees grown for profit as timber. The two methods have little in common. The principles of tree-pruning were the subject of a recent lecture by the Director at a meeting of the Royal Horticultural Society. There cannot be two opinions among practical men as to the necessity of pruning if healthy, well-balanced trees are desired.

— COLLECTION OF IVIES.—The formation of a very comprehensive collection of Ivies and the publication of a work describing and classifying the different varieties was one of the many benefits conferred on horticulture by the late Mr. Shirley Hibberd, whose well-known and popular figure was very frequently to be seen in the Gardens during the last years of his life. At his death most of his Ivies came to Kew, and the collection is now a very rich one, comprising over 100 named varieties. Up to this year, however, no proper accommodation had existed for growing or arranging them to the best advantage, but last winter the commencement of an Ivy ground was made. This is situated among the Chestnut and Oak collections, where, at irregular intervals, large tree-roots have been half buried in the earth, each one of which will be covered by a separate variety. The effect when finished will be pleasing.

— GHENT AZALEAS.—These have of late years considerably increased in popularity, and there are certainly no other hardy shrubs which, in the early summer, can equal them for producing brilliant masses of varied and glowing colour. Except one or two nurseries, where a speciality is made of these plants, the garden devoted to them at Kew is the most extensive, and during the month of May affords a delightful feast of colour and fragrance. Last winter the inside beds, which somewhat constricted the centre of the Azalea garden, were removed to the outside; this makes the *coup d'œil* on entering much more effective, whilst the somewhat maze-like arrangement of the beds, so charming when the plants are in flower, is still retained. The alteration also brings into greater prominence the magnificent specimens of *Magnolia conspicua* and *M. Soulangeana* in the centre, which this spring have flowered more freely than for many years.

— EARLY PEAS.—I had thought the old notion that to obtain early Peas for gathering it was needful to sow seed in November hardly now had any footing in gardening. It was therefore something of a surprise to find that at the recent Drill Hall meeting of the Royal Horticultural Society samples of Pea growth shown from November sowings. It would not have been difficult to have found numerous instances where from January sowings on warm borders quite as early results might have been seen. I do not think it is possible to find a case anywhere in which November sowings are now found to possess any advantage over those made in January or February. Certainly we have had a very mild winter, one during which November-sown Peas would suffer very slightly indeed. That is, however, an unusual state of things, and not to be relied upon as generally probable. I saw William Hurst Pea in bloom in one garden on a warm border so early as the beginning of April from a January sowing.—D.

— CUCUMBER PROGRESS.—It may be said of the superb fruit of this new Cucumber that unanimously obtained a first-class certificate at the Drill Hall last week, they were as near perfection as well could be. Mr. Mortimer has without doubt a splendid strain, from out of which he evokes such beautiful samples; but he is all the same entitled to the credit of being a successful grower. Those who know what Lockie's Perfection is when well grown will find in Progress identical fruits, but fully 6 inches longer. Nomenclature in all garden things is apt to be somewhat contradictory and confusing. Thus it is difficult to understand how Progress can excel Perfection, and it also shows how very unfortunate it is to find appellations that indicate finality, seeing that so long as gardening endures there can be no finality in anything. In how many cases such as Potatoes, Peas, and Melons, have we found Perfections in a few years left a long way behind and forgotten? We must not even acknowledge finality in Cucumbers, wondrously handsome and perfect as they seem to be.—D.

— HYBRID PLANTS.—It is very difficult to get those persons of limited observation to believe that pollen has no immediate effect on fruits. It is, says "Meehan's Monthly," conceded that the seed itself—that is to say, the cotyledons—are influenced by pollen, but the cotyledon is really a part of the new plant. Indian corn is an illustration that albuminous matter, which constitutes the greater part of the seed of the corn, is really a part of the new plant, just as much as the white of an egg is a part of the new creature to be born, and we see immediate effect in corn; yet we frequently have intelligent men contending that fruit trees in an orchard will influence the different varieties by their pollen. Surely it must be known by this time that there are orchards of scores of varieties of Apples, vineyards with dozens of varieties of Grapes, experimental beds of various fruits with numerous varieties, and yet the fruit of all come true to their several varietal characters. At a recent meeting of the American Pomological Society, a gentleman from Florida read a paper to show how one variety of Orange was so much influenced by the pollen of another as to produce fruit of different forms and shades of colour. These are the result of morphological and physiological changes, with which pollen has nothing to do. This fact is so well known as to be scarcely worth repetition, only for the fact of the pollenising thought gaining currency.

— STAMPING FOREIGN FRUITS.—Before the Select Committee of the House of Lords on the Marking of Foreign and Colonial Produce, Mr. Berry, of the Kent Fruit Growers' Association, last week gave evidence as to the misleading business being carried on through foreign fruit being brought over in English packages with no name on but that of the salesman, so that as it was brought up in the same trains as the Kentish fruit none but experts could detect the difference. The fact was, however, that this fruit was plucked before it was ripe in order to stand the carriage, and therefore had less juice and flavour than English fruit. Makers of jam, some of whom used Black Currants by hundreds of tons, found that foreign fruit was inferior, but they had no means of checking it. What the growers wanted was to have the packages marked with the name of the place of origin, and that it should not be allowed to leave the quay without such mark. Mr. John Wood, a grower in West Kent, said thousands of tons of Plums came from Switzerland, while those in Kent would not pay for plucking, and were left to the birds. He would have all foreign jam marked as foreign. Mr. Vincent, another grower, gave evidence of a similar purport. Sir Charles Mills, Agent-General for the Cape of Good Hope, said that there was a very considerable importation of fruit from the Cape, which was increasing every year. It was sold at Covent Garden as Cape fruit, but as far as the retailers went he only knew of one place where it was sold as such. He had seen Spanish fruit exposed for sale in a shop window as Cape Grapes.



DENDROBIUM DELLENSE.

THIS is a beautiful hybrid Dendrobium, and when exhibited by Baron Schröder, The Dell, Egham, at the meeting of the Royal Horticultural Society on the 8th inst., a first-class certificate was awarded for it. The parents are *D. nobile* Schröderianum and *D. splendidissimum*, the former being the seed bearer. The flowers resemble those of *D. n. Schröderianum* in colour, but favour the other parent in form. The sepals and petals are white, faintly tinted purple at the points, the lip being characterised by a maroon-coloured blotch. Fig. 61 on page 379 represents this Dendrobium.

CYPRIPEDIUM MACROCHILUM GIGANTEUM.

At the Drill Hall, Westminster, on the 8th inst., Messrs. J. Veitch & Sons, Royal Exotic Nursery, Chelsea, exhibited a plant of *Cypripedium macrochilum giganteum*, and for which the Orchid Committee of the Royal Horticultural Society awarded a first-class certificate. This *Cypripedium* is a hybrid, the result of a cross between *C. caudatum* Lindeni, and *C. grande*, and is one of the finest kinds in cultivation. In some respects the flowers resemble those of *C. macrochilum*, but are larger and better coloured. The sepals are pale yellow veined and tinted green, while the petals are purplish bronze, white and green at the base, and have tail-like appendages nearly 18 inches in length. The lip, as depicted in the illustration (fig. 62) is very fine, being broad and well rounded. The exterior of the lip is a bronzy green shade, while the inside is white spotted purplish crimson.

ORCHID JOTTINGS.

ORCHIDS were not very extensively shown at the Drill Hall on the 10th inst., but the few exhibited included some exceedingly choice species, varieties, and hybrids. Foremost amongst the latter must be placed the beautiful *Dendrobium Dellenense*, shown by Baron Schröder. This, as remarked elsewhere, was obtained by crossing *D. nobile* Schröderianum and *D. splendidissimum*, and may prove suggestive to hybridists. Messrs. J. Veitch & Sons sent a number of their special Orchids, including the splendid *Cypripedium macrochilum giganteum*, which is described and illustrated in this issue. A beautiful hybrid *Disa*, named *D. langleyensis*, staged on the above-mentioned occasion by the same firm also attracted notice. This is the result of a cross between *D. racemosa* and *D. tripetaloides*. The flowers are pale rose in colour, borne on tall slender spikes, and when a mass is grown in a pan make a charming display.

As may be expected at this period of the year *Odontoglossums* contributed their share towards the display. Mr. Welbore Ellis, Hazelbourne, Dorking, sent a splendid form of *O. Pescatorei*, the sepals and petals being very broad, and the latter were covered with purplish spots. Mr. De Barri Crawshay, Rosefield, Sevenoaks, had a grand variety of *O. triumphans* which has been named Lionel Crawshay. The flowers on the plant exhibited were large and richly coloured. The beautiful *O. crispum apiculatum*, shown in splendid condition by Messrs. Charlesworth, Shuttleworth & Co., was much admired by visitors. Other rare Orchids were staged at the meeting referred to, but orchidists generally reserve their best plants for the Temple Gardens Show, which opens on Wednesday next. Here we may expect to see a magnificent display of Orchids, and one which, it is hoped, will eclipse all former efforts.

A correspondent informs me that fairly good prices were realised at the sale of the Pickering Lodge Orchids, which took place last week. He says, "On the first day the sale was brisker than I have seen on any previous occasion, at least for several years. The best price was given for *Cattleya Mossiæ Reineckiana* by Messrs. F. Sander & Co., 160 guineas. This *Cattleya* was bought two years ago by the late Mr. Hardy at the Howick House sale for 55 guineas. The next best price given by Messrs. Hugh Low and Co. for *Cattleya Mendeli Firthi*, was 70 guineas, and many plants realised from 20 to 50 guineas."

New Orchids have so continually been brought before the notice of the public that they create but little sensation unless of exceptional merit, and then only amongst enthusiasts. This is the case of *Grammatophyllum Guilelmi* II. This species was, I

believe, introduced by Messrs. F. Sander & Co. from New Guinea, and was recently described in the "Gartenflora" as follows:—"Grammatophyllum Guilelmi II., habit of *G. Fenzlianum*, but larger, with massive stems and leaves 2 feet long by 4 inches in width. Raceme about 3 feet long, bearing from twenty to thirty-five handsome flowers, each over 3 inches in diameter, and coloured purplish brown margined with greenish yellow, the lip white with purple stripes." The same firm also introduced a new *Dendrobium* which has been named *D. Augustæ Victoriæ*, and described in the above-mentioned journal as "a large growing species in the way of *D. Mirbelianum*, bearing at the apex of stout pseudo-bulbs racemes 1½ foot long, clothed with numerous handsome flowers, each over 1 inch in diameter; sepals white, petals pale yellow with purplish markings, and the lips rose purple."

Everyone who has grown, or frequently seen, a large collection of *Cypripediums* will have occasionally noticed a bloom with two lips. Such instances are generally passed by without comment, although specimens have been brought to the meetings of the Royal Horticultural Society. However common, though, these abnormal *Cypripedium* flowers are, those with three lips may be considered a novelty. At a gathering of the Scientific Committee of the above-mentioned Society held last month, the St. Albans Orchid firm had a specimen of *C. niveum* with three lips, which had been received from M. Joly of Vienna. The peculiarity consisted in the fact that the lateral petals had assumed the form ordinarily confined to the lip. It was stated the plant produces such flowers regularly.

Some years ago I saw a very fine plant of *Epidendrum nemorale majus* at an exhibition, and it presented a charming appearance. According to my experience, however, this Orchid is not so frequently seen nowadays as was formerly the case, though for what reason it would be difficult to say. *E. nemorale majus* is a most beautiful Orchid, and can easily be grown in a house with *Cattleyas*. In some gardens it is established on blocks of wood, whilst other cultivators prefer growing it in a hanging basket or pot. The flowers, when expanded, are nearly 4 inches in diameter, and they last for several weeks in good condition if the plant is placed in a moderately cool dry atmosphere. The colour of the petals and sepals is mauve or rosy violet, and the lip whitish lined with red, having a margin of a dark rose shade. As a rule the blooms are borne in great profusion on spikes from 2 to 3 feet in height. One of the principal points as regards the culture of this *Epidendrum* is to never allow the pseudo-bulbs to shrivel. If this once occurs it is no easy task to restore the plant to its normal health.

Writing about *Epidendrums* brings to my mind the beautiful old *E. radicans*, a specimen of which was exhibited by Messrs. B. S. Williams & Son at a recent meeting of the Royal Horticultural Society. It is a pity this Orchid is not more common in gardens, for as regards effectiveness when in bloom it can well hold its own. The sepals and petals of flowers are bright orange scarlet, the lip being principally yellow edged with scarlet, and when the blooms are numerous they produce a most gorgeous sight. One of the fine specimens of this Orchid I have ever seen was trained—yes, trained—to a balloon trellis, many of the stems being 8 and 9 feet in length. It is not difficult to grow, but does not flower so freely as numerous other Orchids that could be named, and this probably may account for its conclusion from many collections. It is said to be synonymous with *E. rhizophorum*, and was introduced from Mexico in 1860.—SPECIALIST.

SMALL COLLECTIONS OF ORCHIDS.

BEGINNERS in Orchid culture are often at a loss to know what kinds are most suitable to commence with. A succession of bloom throughout the year, as far as practicable, is usually desired, price has also to be considered, and those plants chosen that are easiest to grow. The species and varieties named below will make a very interesting collection.

Oncidiums are essentially Orchids for beginners, their only drawback being a somewhat limited range of colour, most of them containing a good deal of yellow. Their long-lasting qualities, however, combined with freedom of flowering, will always secure them a prominent place in collections. *Oncidiums crispum*, *flexuosum*, *sphacelatum*, *incurvum*, and *varicosum* of the warm-house section, and *O. cucullatum*, *O. concolor*, *O. macranthum*, *O. Marshallianum*, *O. ornithorhynchum*, and *O. tigrinum* of the cooler species will be found a good selection.

Among the *Odontoglossums* it is difficult to know where to stop, as there is hardly a species that may be called difficult to cultivate, and all are beautiful. *O. crispum*, *O. cirrhosum*, *O. luteo-*

purpureum, *O. maculatum*, *O. odoratum*, *O. Pescatorei*, *O. Rossi*, and *O. triumphans* are all sterling cool house varieties, and where a slightly higher temperature is maintained *O. citrosmum*, *O. grande*, and *O. vexillarium* may be added.

Cattleyas *Trianae*, *Percivaliana*, *intermedia*, *Mendelli*, *Mossiae*,

When judiciously managed *Dendrobiums* add greatly to the attractions of the Orchid house in the spring, and *D. aureum*, *D. nobile*, *D. Pierardi*, *D. densiflorum*, *D. thyrsiflorum*, *D. chrysanthum*, *D. Farmeri*, and *D. Wardianum* are only a few of the many good kinds this genus affords. *Cypripediums* *barbatum*,



FIG. 62.—CYPRIPEDIUM MACROCHILUM GIGANTEUM.

Gaskelliana, *labiata autumnalis*, and *Bowringiana* will provide a succession of flowers nearly the whole year through. Among the *Laelias* *anceps*, *purpurata*, *harpophylla*, *Perrini*, and *autumnalis* are all worthy of a place.

insigne, *venustum*, *villosum*, and *Sedeni* are easy Orchids to grow, and keep in flower for a long period, the last named species being seldom out of bloom. *Masdevallias* *Harryana*, *ignea*, *Lindeni*, and *Veitchi* are very bright and effective when in flower. *M. towarensis*

is the only white *Masdevallia*, and it may be mentioned here that the bloom spikes of this species ought not to be removed, as they produce flowers several years in succession. *Cymbidium Lowianum*, *Epidendrum vitellinum*, *Lycaste Skinneri*, *Coelogyne cristata*, *Phaius grandifolius*, and *Pleione lagenaria* and *maculata* are all useful and popular kinds. *Calanthes Veitchi* and *vestita*, and *Zygopetalum Mackayi* are three good winter-blooming Orchids.

All the species named can be easily wintered in the same house. Sufficient piping should be provided to maintain a minimum of from 45° to 50°. The *Cattleyas* and *Calanthes* ought to have the warmest place, while the *Odontoglossums*, cool *Oncidiums*, and *Masdevallias* may occupy the coolest position. During the summer these latter will, of course, need less heat than the other occupants, and may be grown in a frame as advised on page 338 of the *Journal of Horticulture*.

CATTELEYA CITRINA.

We have few *Cattleyas* that vary so little in colour as this fragrant species. The only variations I have seen are a whitish margin to the lip in some flowers, and a dull brown tinge to the petals in others. This may be owing to the absence of bright colours on the labellum, as when growing wild bees and other insects are attracted by these colours on many varieties and cross fertilisation thereby effected.

Some persons have expressed a doubt as to whether this *Cattleya* can be successfully grown in an upright position. There can be no reason why it should be so grown. To keep *C. citrina* in health frequent spraying is very helpful, and Nature has provided a means whereby the superfluous water is carried off. The flowers, too, are shown to greater advantage when growing naturally. After flowering this species should, if possible, be induced to rest awhile by keeping cool and rather dry at the roots in the *Odontoglossum* house. When it is seen to be starting into growth the cool end of the *Cattleya* house is the best position for the plants. Here they may remain until the flower sheaths appear, usually early in the new year, when cooler quarters will again be advisable.

C. citrina will grow well on bare charred blocks or on blocks lightly dressed with sphagnum. They must be wired on firmly, and look best if suspended at an angle corresponding with the roof of the house in which they are growing.—H. R. R.

THE NUTRITION OF ROOTS.

I SHALL be glad if any of the numerous readers of the *Journal of Horticulture* who are better versed in the matter than I am will correct me if wrong on the following matters connected with the nutrition of the roots of plants. I do not at all suppose that what I suggest is anything fresh, but quite expect that whatever is true in it is not new and whatever is new is not true. Take four statements:—

1. That the roots of plants (with the exception, I suppose, of aquatics and bog-lovers) do not and cannot assimilate water, but only watery vapour or water in a vaporous form. I have this statement from a good scientific authority, and am told by him that it is usually accepted by the best botanists. In itself it was news to me.

2. That moisture is always, more or less, rising through the soil by the combined effects of capillary attraction and evaporation. This is, as far as it goes, my own statement; but I take it to be generally acknowledged, and it seems to me that if there is any watery vapour in the soil this is it.

3. That therefore, as a deduction from the last two statements, the roots of all plants which like drainage subsist only on the moisture which is always rising from beneath through the soil, and will not benefit from any liquid till it has reached to or below them and commenced to rise, which in favourable circumstances it would probably do almost at once.

4. That the rising vaporous moisture, as long as it is in the soil and has not yet passed into actual vapour in the air, can and does hold in solution the soluble mineral constituents of manure. If No. 1, for which I am not responsible, is true, this seems to be true also, for how else could such plants receive manurial benefit at all? The only conclusion I wish to draw is, that therefore manure placed completely under plants, say *Roses*, is of nutritive benefit, even if the roots be horizontal, near the surface, and do not descend into the manure. But these facts, if facts, are surely not generally known and acted on; and if not facts, where is the mistake?

About this time last year, when the earth was as iron and the sky as brass, some small weeds (annuals and fine grass; not Spear Grass or Bindweed, or any fleshy rooted plants) appeared near the middle of one of my gravel paths on a south border. The gravel there is quite 6 inches thick, and at such a time and place must have been, one would have thought, absolutely dry. I watched the

hardy strugglers, and they distinctly grew, though very slowly. Surely they must have subsisted on moisture rising from far beneath, as the roots of bulbs on the Dutch Hyacinth farms do on that which ascends to them from the water-bearing stratum below through 4 feet of sand.

The theory does not seem to me to go against any known facts. Liquid manure poured on the surface, or water passing through manure above the roots, when it arrived below them would soon begin to rise and come within reach in an available form; also mulching, hoeing and other forms of preventing evaporation, only check it at the surface, and preserve the moisture from passing in mere vapour. But surely it is not generally understood that the roots of plants only imbibe moisture as it is in the process of being evaporated. And my question is, Is it true?—W. R. RAILLEM.

A TRIP TO ANTWERP.

A REVERIE.

WHEN a land lubber is thinking of a voyage he is destined to make across the sea for the first time the chief object of his thoughts during the week previous is the weather. He taps the barometer every time he sees it, and his heart flutters with the atmospheric fluctuations. He watches the direction and force of the wind as it moves the smoke and the trees, also the movement of the clouds as they seud over him, dreading to see them wildly race each other. If he comes near a river the wavelets have an interest for him such as they never had before, and if he sees the suspicion of foam it carries him in fancy to the ponderous surgings of the mighty sea. When he opens his daily paper he searches nervously for the weather table and scans with solemn thought the forecast. He shudders when he reads of a disturbance approaching that may develop into a depression of considerable intensity. An anti-cyclone is then his one great hope. He cares nought at such times for the results of elections or divisions in the House. The fall of a government is a trifling accident to him in comparison with the moods of the sea. That is his one thought. He is a victim of water on the brain and dreads an attack of *mal de mer*. It is not a happy frame of mind to be in, but after all the reality may not be so bad as the anticipations; but then it may be even worse, according to—well, the ship and the weather.

THE ROUGH AND THE SMOOTH.

The man who has gone through the rough and the smooth of a sea passage views the next trip across complacently. He balances the chances philosophically, and takes refuge in the principle of averages. He has rejoiced in the delights of a bright day and a calm sea, and has been dashed about in darkness by a raging storm. If he take the mean between those two extremes he feels he can endure it, but knows that his chances are better than that even in the breezy month of May. Yet his mind will occasionally revert to the dark time when he was caught in the equinoctials. He thinks of his fellow voyager, who crossed the North Sea for the benefit of his health and was disappointed on landing that he had not been "sick" on the way, and particularly does he think of him on the return passage when a tremendous lurch of the vessel sent him spinning across the saloon like a shuttlecock and knocked some of his teeth out. He thought the end had come, groaned a pathetic "good-bye" as he vanished under the table and remained there for twelve hours. That was years ago in a small unstable steamer that danced across from a northern port. Different, larger, better, even luxurious boats run now, and make the best of the weather, whatever it may be.

THE WAY TO GET THERE.

Some persons have such a dread of the sea that they are apt to choose the shortest cut across, forgetting that in the narrows the rush of waters is stronger, and the surging often more violent than in a broader expanse, and hence it is that many a seafarer would rather cross the Pacific than the English Channel; also many a busy man, and even a leisurely man, prefers a night to a day journey when he crosses over to the Continent. Then, if his destination is Belgium or Holland, he takes the increasingly popular Great Eastern route. He can have a day of work if a City commercial, or a day of sight-seeing in London if a country visitor, then cross over in the night. Here is the record of the latest experience. The occasion was a trip to Antwerp; the object, a sight of the Great International Exhibition there, with more particular reference to the first Great Horticultural Show associated therewith, and the meeting with old, genuine, and genial Belgian friends.

RAIL, SEA AND RIVER.

We left Liverpool Street at 8.30 ran through without a pause to Harwich, stepping from the platform to the steamer about 10.45, and moved from the pier fifteen minutes afterwards for the east. The night was dark, but the sea not rough, while in the saloons and everywhere of the "Colchester" all was made cheerful by the electric light, the saloon being also rendered home-like by the presence of plants. Some of them had had several trips, possibly not always smooth, as they

looked a little "seedy," though most seemed fresh and happy. There were Myrtles, Euonymuses, Fatsias, Ferns, with drooping Isoplepis; Libonias, Spiræas, Cinerarias, Zonal Pelargoniums, and Hydrangeas; also Tulips, Poet's Narcissi, and Roses in a cut state—these, and something more of a different kind, that may come under the familiar denomination of "what-you-like," for these "boats" are floating hotels, amply furnished, and the reverse of expensive. At 5 A.M. we reached Flushing, the sun shining brightly, and we entered into the narrower yet broad waters of the famous Scheldt. For a long distance the river is some seven miles wide at high water, probably for the first thirty miles, then gradually contracts over the next half of the journey, yet is a noble stream even at Antwerp. Craft of various kinds coming out to sea lent life to our progress—first on this side, then on that, following the course between the buoys. The country traversed by the river is flat. We have for a long distance Holland on the left, and Belgium on the right; but as we approach our destination, on the left bank we behold the historic Belgian city, one of the leading ports of the world. The river is guarded by batteries, placid enough now, but under the terraces of verdure rest volcanoes of destruction, always, let us hope, to remain in quiescence. We are alongside of the quay before 9 A.M., and after submitting to a perfunctory examination of our luggage, land within five minutes' walk of what thousands of persons will come to see during the present season.

THE WORLD'S EXPOSITION.

Such is the Great International Exhibition called at Antwerp. Though it was opened on the 5th inst. by the King of Belgium it was then far from complete, but order is being reduced from chaos with wonderful rapidity, and the 200 acres will soon be covered with the world's best products, arranged amidst surroundings at once interesting and picturesque.

A SUPERB SPECTACLE.

"It is a superb spectacle to see all the nations meet on the banks of this magnificent river to exchange their products, to compare their progress, and to stimulate their emulation in that labour which, in our age of competition, has become a condition of existence for all. Belgium must strive, without pause, to uphold in the world her industrial, commercial, and artistic renown, which constitutes her greatness and her wealth. We require outlets for our products, and work for our toiling people compressed within the narrow limits of our territory. The marvellous progress of science necessitates the constant improvement of the implements of labour. All nations experience this necessity, and they have therefore hastened to respond to your appeal. It is an honour to have been able, in a few months, with prodigies of exertion and intelligence, to carry these great works to a successful end. In less than ten years you have twice brought together in this great commercial city the wealth of all the countries of the world, and I congratulate the organisers." Thus spake the King, and the organisers well merited the Royal congratulations.

HORTICULTURAL EXHIBITIONS.

In a kingdom justly famed for its horticultural industries a great event such as that above alluded to would be incomplete if prominence were not given to horticulture. Good provision is made for the representation of the art during the season. First comes the show, which was opened on the 13th inst., then follows on the 1st of July another display devoted to Roses and other exhibits worthy of the season, this to be followed with an autumn show of fruits, Dahlias, and other products opening on the 7th of October. The schedule is a comprehensive one—a well arranged production of 126 pages. The division relating to the first show contains 170 classes. Upwards of fifty valuable gold medals are offered, also a naturally greater preponderance of silver-gilt and silver medals, no degeneration into bronze. Of the gold medals two are devoted to new plants, eleven for specified collections, including one valued 200 francs, given by Baron Osy for fifty specimens, one of the same value by M. J. Everaerts for fifty flowering plants, and one by the King for foliage plants, six for Palms and Cycads, including one of 200 francs given by M. de Cock; nine for Orchids, including the Queen's and M. H. Vanderlinden's; four for Azaleas, including one of 200 francs by the City of Antwerp; two for Rhododendrons, three for Ferns and Lycopods, including M. C. Vanderlinden's of 200 francs; two for Cycads, and one each for Bromeliads, Dracænas, carnivorous plants, and Nepenthes. As might be expected, on such a special occasion the response was great and gratifying. In accordance with Belgian custom gentlemen were invited from different countries to serve on the jury for allocating the prizes. This, as well as exhibits from some of those countries, invested the show with an international character. A concise narrative in sequence of the proceedings in connection with the judging will not be uninteresting to those of our readers who like to be reminded of the manners and customs of the busy Belgians in the conduct of great horticultural exhibitions.

It should be stated that the exhibition under notice was inaugurated and conducted by the Council of Administration of the Royal Horticultural and Agricultural Society of Antwerp, of which Baron Osy de Zegwaart, the Governor of the province, is President; M. Jean Everaerts, ex-Senator, Vice-President; M. Henri Vanderlinden Treasurer, with MM. Charles Vanderlinden and Anatole de Cock, Hon. Secretaries. The General Committee consists of sixteen gentlemen, and as the names are published in the order of election, we find that M. Charles Van Geert, sen., is the oldest member, and his son, M. Charles Van Geert, jun., the youngest member of this Committee. About twenty invitations to serve on the Jury were sent to England, and of those who received them the following persons were in attendance personally or

by deputy—namely, Messrs. Cannell, Cutbush, Gordon (Curtis), Ker, Laing (A. J.), Turner (Charles), and Wright.

The summons of attendance was for eleven o'clock on Saturday morning in the horticultural pavilion, and as soon as possible after the time stated Baron Osy gave an address of welcome, and the roll was called. About eighty members were present, and received the numbers of the twelve sections among which they were distributed—from five to eight in a section; these numbers were forthwith placed in the hatbands of the several recipients, in order that each should recognise his own "squad," and not come in conflict with each other in the same manner as the French and English recently did in Africa, through the want of a visible, understood, and recognisable badge. There were thus about eighty judges for the 170 classes, and they discharged their duties, it is hoped effectually, and certainly amicably, this latter fact speaking volumes for the "amenities" of the occasion, because the circumstance is not unknown in England of two or three judges wrangling and metaphorically fighting it out "hammer and tongs" for a verdict. It may be that eight instead of eighty judges, working in the English way, might have settled the prizes in the same time; but that is not the Belgian way. They do not believe in three or four hours of hard exacting labour, preferring to act leisurely, cautiously, colloquially (though it is a jumble of tongues), and all is completed in time—that is to say, about twenty-four hours before the show is open to the public, so the time for completion means being in time for the luncheon.

A SMELL OF LUNCHEON.

In England the time of finishing often means two minutes before the public inrush, and not always so much, and no luncheon. The Belgians' method is the better for the judges, and especially when the repast is such as was provided by Baron Osy on the occasion in question. Fortunately for the genial Baron such events are not frequent. They do not come even at intervals of five years, as at Ghent, but only on special occasions, the last "International" in Antwerp having been in 1885. Fortunately we say for the host, because if eighty men proceed with the utmost leisure in judging they appear able to increase the pace at the festive board, where the numbers in some mysterious way become doubled—perhaps because of the tempting nature of the menu (given below) and the "vins" at the end of it, "vins" appearing to mean the greatest possible amount of champagne in the least possible time, in the shape of a grand fuddle.

MENU:

Potage à la Reine	RÔTIS
HORS D'ŒUVRES	Poularde de Bruxelles
ENTRÉE	Salade
Filet de bœuf à la Godard	EXTREMETS
Cotes de mouton haricots verts	Fruits — Desserts
LÉGUMES	VINS
Asperges en branches	

Yes, the luncheon was decidedly popular and a distinct success; but what of the Show?

LET US SEE.

Ladies and Gentlemen,—If any of you think you are specially adapted to reporting a Belgian show fully, intelligibly, and to the general satisfaction, and have not yet had occasion for distinguishing yourselves in that direction, it might perhaps be advisable to take advantage of the first opportunity to do so. It is true that M. Charles de Bosschere accomplished the feat of publishing a report in pamphlet form, with a plan of the arrangements of the Show under notice, in five or six hours, but then M. Charles de Bosschere was born there, so to say, and possibly he might have obtained a little material in advance through being in touch with the inner circle. Apart from that, however, all are not Bosschere's, though they may feel competent enough to "boss the show"—at least after all is in order.

A Belgian show, on the conclusion of the judging, is a scene of beautiful disorder. Some of the plants may be in or near their places, but most of them are anywhere where the exhibitors "dab them down." Then, if you wait till the next morning, instead of the plants being anywhere they may be everywhere, because they are given over to the "garden architect," in this case M. Fuchs of Brussels, and he does with them as he wills. He lays down grass verges and makes lawns, raises beds and groups plants in them, forms curving walks edged with neat latticework, gravels the paths (all on a boarded floor), and thus forms a beautiful garden with delightful promenades. If any particularly clever young person imagines it easy to report a show like this in the orthodox English style, stiff, stilted and formal, he might, perhaps, on trial find it still more easy to be deceived; and it is extremely likely that one who has had some experience in these matters would arrive at the conclusion not to attempt any stereotyped report at all, but just jot down what came under his notice in a stroll round without knowing, with a few exceptions, whose plants came in his way or giving himself the least trouble about those he may have overlooked, and, therefore, omitted to mention.

The plants were displayed in a large and lofty hall twice the size of the Ghent Casino, the roof glazed and masked with white and scarlet sheeting, the sides draped with scarlet, and the ends decorated with national colours. The hall is usually devoted to concerts and fêtes. It made a splendid horticultural pavilion, and it was splendidly furnished. This could only be accomplished by such tall, yet robust and deep green Palms as we do not see at our home exhibitions; also Tree Ferns, colour being imparted by floriferous masses of Rhododendrons and Indian Azaleas with various other plants in season.

The Palms on the orchestra were magnificent, a truly noble bank

rising from the front to a height of apparently 40 or 50 feet at the back, the twenty plants being distinct varieties. These were flanked by standard Rhododendrons with stems of 4 feet, and heads averaging 3 feet in diameter. In front of the Palms eight standard Hydrangeas showed conspicuously. The stems were about 3 feet, the heads about 5 feet in diameter, some of them having little short of 100 fine trusses. These noble plants were grown and shown in 12-inch pots. With these giants, and dotted here and there beneath them, were plants about 6 inches high, the bold contrasting effect being a good hit; each, the giants and the dwarfs, intensifying the characteristics of the other. These plants of H. Otaksa worthily won M. de Beucker an extra gold medal.

AZALEAS, BROMELIADS, AND TREE FERNS.

On the opposite side of the promenade from the orchestra a circular group of fifty Azaleas gave all the colour that could be wished, for the plants were miniature mountains of flowers in all the colours in which Azaleas are represented—white, rose, pink, scarlet, purple, and intermediate hues, the plants ranging from 3 feet to 7 or 8 feet in diameter, the larger on stems 2 to 3 feet high. This magnificent group was contributed by M. Peeters of Brussels, and won for him the large gold medal of the City of Antwerp. Flanking the central mass of colour were bold groups of handsome Palms on the one hand, and Cycads on the other, these in turn having bright adjuncts in flowering greenhouse plants and standards of *Azalea mollis*. Then we come to another central group, and a beautiful one, of Indian Azaleas, the plants models of good culture and floriferousness. These plants ranged from 2½ feet to 3½ feet in diameter, and were mostly grown on stems from 1 to 2 feet high. A few varieties of remarkable excellence were Oswald de Kerchove, crimped rose; Eulalie Van Geert, delicate peach; Hooyboenki, bronze purple; Candida maxima, white sulphur centre; Mons. Thibaut, crimson scarlet; and Le Paix, soft rosy purple.

Among the isolated central plants that stood conspicuous were two gigantic Bromeliads, *Vriesia glasiona* and *V. Hielegeriana*, the former with leaves 6 inches in diameter at the base, arching, and hanging down so as to quite obscure the elevated tub, or a length of 4 to 5 feet—a plant of much character and beauty. The other of the giants, though perhaps less graceful, was still more remarkable. The leaves were broader, thicker, and longer, rigid, not arched, their length being 6 to 7 feet, while a flower spike of great strength rose to a height of 11 to 12 feet, and pushing about twenty side branches, the first flower, of a buff colour, just expanding. Bromeliaceous plants appear to be more valued on the Continent than in England, yet when well grown, as all were in the exhibition, there is no mistaking their beauty in form, colour, and markings, apart from the brilliancy of several of the leaves and flowers. For vases in rooms few plants have a more distinguished appearance, while they are of easy cultivation.

Passing along the curving grass verged walk and its neat edging we note on the left M. De Smet's Musas and Tree Ferns, then MM. Jacob Makoy & Co.'s fine collection of Araucarias. Opposite these was a magnificent bank of Rhododendrons from M. B. Fortie of Ghent, apparently about forty bushes about 5 feet across, laden with splendid trusses in all the colours peculiar to these shrubs. A highly meritorious exhibit that won a special gold medal offered by the city. A group of white Azaleas from M. Jean Vervaene, Ledeberg, "in honour of the marriage of the Princess Josephine of Belgium and Prince Charles of Hohenzollern," margined with dark Coleuses, and backed with Palms, was much admired, the plants being so well flowered and fresh for the season.

SOME EFFECTIVE GROUPS.

An extremely bright, sparkling, and interesting group of tuberous-rooted plants in flower was exhibited by M. Henri Vanderlinden, and well merited the gold medal which was unanimously awarded. The group comprised Lilliums, Amaryllises, Tulips, Watsonias, Scillas, Ixiolirions, Tritonias, Ixias, Sparaxis, Babianias, and Alliums, a pleasing feature of the show. Next was a circular group on grass of luxuriant Marantas, then a round bed of Cinerarias, but between these beds a magnificent Palm, *Latania*—a veritable giant from the establishment of M. Pynaert Van Geert of Ghent, such a specimen as has never been seen at an English show. Proceeding we had on the pyramid and standard Cytisuses—like golden globes and pillars animated with Cycads, and arrive at the opposite end of the huge structure from the orchestra, and really the main entrance to the show.

This was flanked right and left with bold groups of handsome Palms edged with Carnations. In the front was a grassy vale and a charming vista. Specimen plants were stood here and there on the lawn, groups of flowering plants being disposed on the gently sloping banks. Immediately in front was a bed of herbaceous Calceolarias, the plants not so good as we see them at home, but Azaleas in an adjoining bed were a great deal better, and beyond was a bed of Roses. Looking from the main entrance towards the orchestra a hundred yards away we had before us a beautiful scene—flowers flanked with Palms and foliage plants, M. Peeters' noble Azaleas telling splendidly in the distance. The effect was undeniably beautiful. There was room for the display of everything to the best advantage, yet the vast space was amply filled from floor to roof.

Proceeding up the other side of the building, we passed luxuriant masses of foliage plants, brightened here and there by groups of Crotons and Azaleas, with Pansies in pots, splendidly grown, as an edging. On the left were beds of Cinerarias, Pelargoniums, and Amaryllises, also Anthuriums and Lilliums. Against the sides of the hall were bold semicircular groups of Cycads and ornamental foliaged plants reaching nearly to the roof, the spaces between these being occupied with Orchids.

A DISPLAY OF ORCHIDS.

These made a gorgeous display, the collections being arranged on tabling, with a front of balustrading, along the sides of the hall—not in a continuous line, but in recesses between bold Palms and other stately plants, while opposite the Orchids were Ferns, which brought out the effect of the Orchids more clearly. M. Ch. Vuylsteke, Loochristy, Ghent, furnished a table upwards of 50 feet long and about 10 feet wide, with an extremely varied assortment, tastefully arranged. Several of the forms did not possess special value, yet many were of great excellence. A few of the more noteworthy were *Lycaste Laurentiana*, with eight of its peculiarly coloured and distinct flowers; *Odontoglossum crispum Trianae*, bright and beautiful; *Cochlioda Noezliana*, with arching spikes of soft scarlet flowers; *Miltoniopsis Bleuana*, with gigantic nearly white flowers; *Odontoglossum vexillarium Empress Augusta Victoria*, with fine spikes of large richly coloured flowers; *Cattleya Mossiae maxima*, bold and rich; *C. Gaskelliana alba*, *C. Schröderi*, *C. Mendeli matutina*, with peculiar drooping flowers; several fine examples of *Cypripediums* and *Miltonias*.

Mr. A. A. Peeters, Saint-Gilles, Brussels, had a somewhat less extensive collection, but the plants were, on the whole, finer, and displayed superior cultivation. Splendid examples of *Masdevallia Veitchi grandiflora* stood forth conspicuously, as did several *Cattleyas*. *Odontoglossum Ruckeri purpureum* attracted attention by its chaste markings and purple suffusion. *O. crispum capartianum* was very rich. Also rich, but in a different way, were *O. polyxanthum* and *O. Coradinei superbum*, while quaintness was imparted by the almost black and white *O. Reicheimi*.

M. G. Vincke-Dujardin, Scheepsdaele, Bruges, exhibited a very extensive and magnificent collection. It contained a less number of distinct forms than were shown by M. Vuylsteke, but there was no mistaking the high character and high culture of the Bruges plants. With all so good, it is difficult to particularise. *Vandas* were in admirable health and flower, and the same may be said of *Cattleyas*, *Laelias*, *Dendrobiums*, while the group was particularly rich in *Odontoglossums*, many, if not most, of the *Alexandrae* varieties being of striking excellence—spikes strong, and flowers massive, bright, and clear. A fringe of Ferns was needed to finish with advantage this extremely rich and decidedly meritorious contribution of Orchids.

MM. Jaunsens & Vincent, Merxhem, near Antwerp, had an excellent display of Orchids, pleasingly associated with Ferns. The centre of the table was occupied with a collection of *Cypripediums*—small, but well grown plants in good varieties, the ends with a mixed assortment, representing good varieties and culture. *Odontoglossum vexillarium* was admirably shown, as was *Ansellia congoensis*, with hundreds of richly barred and spotted flowers. *Cypripedium Albertianum* (*C. Spicerianum* × *insigne Wallacei*) was bearing four charming flowers. Also conspicuous was *Cattleya Hippolyta*, with five of its distinct cinnabar-coloured flowers. In the chief Orchid classes the Queen's gold medal was adjudged to M. Vuylsteke, the City medal to M. Vincke-Dujardin, other special large gold medals going to M. Peeters and M. Van Imshoot, while M. Massange de Louvray was unanimously awarded a diploma of honour for an extensive, varied, and valuable collection of *Odontoglossums*.

ENGLISH EXHIBITS.

At the entrance to an annexe we found a brilliant group of flowers from Swanley, displayed in Messrs. Cannell's best style. Double and single Zonals, Show Pelargoniums, Pæonies, and Begonias, with the brilliant *Reine Charlotte Canna*, and Mrs. Cannell *Carnation*, all as fresh as when cut, and for which a special gold medal was awarded. A similar honour was granted Messrs. Cutbush & Sons, Highgate, for a group of Heaths and other hardwooded plants, also cut flowers of the new crimson *Carnation Uriah Pike*.

NEW PLANTS.

New plants were not by any means numerous. MM. Jacob Makoy and Co. secured the gold medal for fifteen plants introduced since 1891, but most of them are in the English trade. Perhaps the most distinct in the group was *Nidularium Makoyanum*, all the large leaves being closely and clearly margined with white. The same firm also secured the gold medal for six new plants, the most distinct perhaps being *Maranta Leopoldi*, with narrow undulated leaves, and *Heleconia Lubbersi*, large velvety *Maranta*-like leaves, with a light midrib. The firm also won the silver medal for three plants with *Hoplophytum Makoyanum*, with long narrow *Anthericum*-like leaves clearly margined with white; *Doryopteris multijuga*, with deeply cut leaves, and *Adiantum macrophyllum variegatum*.

The medal for the best new plant in flower was unanimously adjudged to Mr. Charles Turner of Slough for the new Japanese Rose *Crimson Rambler*, and the plants were purchased by Mr. Knight for the Royal Gardens. The same plants had been exhibited at the Crystal Palace and other shows. No flowering plant in the show arrested half so much attention as did this Rose. *Saintpaulia ionantha* (Wendland) *La Violette d'Usambara*, a new plant exhibited by M. Benary, for some reason was not honoured. It is a charming Gesneriaceous plant with thick subcordate dark green leaves about 2 inches wide, on stalks about the same length, flowers of a rich purplish violet colour, deepening towards the centre, from which the bright stamens sparkle like gems of gold. The flowers are nearly an inch across, and borne on panicles of from two to six. This distinct plant is said to flower freely through the winter in an intermediate house.

M. Jos. Vervaene secured the large silver-gilt medal for twelve new

Azaleas. The most promising varieties being *Julia Vervaene*, salmon margined white; *M. Jean Pecters*, deep rosy crimson double; *M. Ch. Vuylsteke*, crimson scarlet double, and *Le Vainqueur*, bronze crimson. *M. Van Acker* was second, his best variety being *Madame Jos. Vervaene*, creamy blush, semi-double.

FRUIT.

A small but excellent collection of fruit was exhibited by *M. Sels of Duffel*. Four bunches of superior *Frankenthal Grapes*, also very good *Foster's Seedling*. A basket of splendid *Amsden Peaches*, also remarkably well grown plants of *Louis Vilmorin Strawberries* in pots. Two plants were grown together in 7-inch pots, each bearing from nine to twelve fruits, most of them ripe and very fine. A basket and small box of gathered fruits were also exhibited, these fruits being splendid both in size and colour, wedge shaped chiefly and glossy scarlet. This is a fine *Strawberry*, not very dissimilar from *Laxton's Royal Sovereign*.

Besides the honours mentioned in the foregoing narrative a few other gold medals of special value were awarded—namely, *Baron Von Ohlendorff's* to *M. Nagels* for Conifers; *Baron Ozy's* for specimen plants to *M. Peeters*; *Mr. Everaert's* for specimen flowering plants to *M. Berckelaers*; and the *Queen's* to *Messrs. De Smets* for ornamental foliage plants. *Mr. J. F. Vervaene-Verraert, Ledeberg*, was awarded a large silver-gilt medal for a collection of *Anthuriums* of the *Scherzerianum* type in diverse colours.

Altogether the exhibition was of great magnitude, diversity, and beauty—a credit to all who shared in its production, as well as to the famous city in which it was held, and to horticultural Belgium—a land of plants and good cultivators, also of pleasant and hospitable people. Unfortunately the weather on judging day (Saturday) and the opening day (Sunday) was the very reverse of favourable, rain falling for about thirty-six hours. The King arrived at the show soon after two o'clock on Tuesday, and spoke appreciatively in reply to the address of *Baron Ozy*. His Majesty remained a long time in the Exhibition, chatting most affably all the while with persons with whom he came in contact. The King's opinions on the show have not transpired, but it will be safe to say that it was the most extensive and meritorious that has ever been seen in Antwerp. *Mr. Turner's Rose* and *Messrs. Cannell's Pelargoniums* met with great admiration, and the visitors appear to think the English have some secret—something they put in the water—for keeping flowers so fresh and bright, and if neat bottles of *Cannell's* reviver had been on sale it may be expected a large number would have been disposed of. In the evening a grand banquet was held in honour of an event which more than exceeded the anticipations of visitors who were able to attend and enjoy the generous provision made for their delectation in the ancient and modern city on the *Scheldt*—brisk, enterprising, active Antwerp.

Every person who can should during the season see the General Exhibition, of which, perhaps, a little may be said another day.

PECKHAM RYE PARK.

ON Whit-Monday *Mr. John Hutton*, the Chairman of the London County Council, opened the newly completed *Peckham Park*, which adjoins the already popular *Rye*. In declaring the park open *Mr. Hutton* said that among the many interesting functions which it was his privilege as Chairman of the County Council to take part in there was none that was of greater interest than an addition to London's parks and open spaces, for he felt that there was nothing which so directly and immediately conferred a benefit upon the teeming masses of the population. The Council's record during the past five years showed that 1000 acres had been added to the open spaces of London. The cost of maintaining these was £100,000—and £100,000 well laid out. The number of men employed was 679, supplemented by 200 men engaged for special work.

The land was acquired for the purpose by the Council a little more than a year ago at an initial cost of upwards of £50,000, of which £18,000 was given by the Council, £20,000 by the *Camberwell Vestry*, £11,000 by the *Charity Commissioners*, the remainder being raised by smaller contributions. Immediately on acquisition the work of bringing it to its present praiseworthy condition was begun, and it has continued unceasingly ever since. Part of the ground was nothing more nor less than a swamp, and almost the whole needed thoroughly draining and remodelling. All this was placed in the hands of *Mr. D. Burch*, who, acting under the instructions of the talented *Major J. J. Sexby*, has splendidly carried out the work. Where one year ago was a swamp is now the cricket ground, firm, level, and about 10 acres in extent. An erst-while market garden has been transformed into a children's playing ground, where they will be enabled to revel in the sun or the shade, so admirably is it situated. Another quarter was the abode of all kinds of rubbish, and in many parts was full of holes, but now some hundreds of loads of good mould have been carted on, and so placed that the land rises in a bold picturesque slope to a crown of grand old trees at the top.

There are five entrances to the park, named respectively the *Sunny Side*, near the storeyard and stables which are about to be built; the *Homestall*, leading to the lake; the *Rye Hill Park*, leading to the wood and tennis ground; the *Friern Road*, leading through the wild garden mentioned below; and the *Elms*, leading by a broad walk to a small

rockery, on which a good collection of rock plants have been placed. Although there are nearly two miles of walks, an uncommon feature is that carriages and bicycles are rigidly excluded, which will certainly render it far more pleasant, and, it may be added, more safe for pedestrians. The walks are well formed, and many bold sweeps are noticeable. By the sides of some of them, and protected by a light yet substantial looking iron fence, broad borders have been formed stocked at present with perennials, shrubby and herbaceous, which when thoroughly established will doubtless produce a fine effect. One of the most charming walks is that running by the side of the tennis ground, but separated therefrom by a broad belt of wood, while on the other side, which is next the *Rye*, there is a similar plantation, which will afford delightful shade during the hot days of summer. A curiosity here, too, are the arches, formed of immense pieces of whalebone, and over which is being trained some of the choice varieties of *Ivy*.

A prominent feature of *Peckham Rye Park* is what may be termed its naturalness. It is to be a park in fact as well as name, and not a dressed ornate garden of the keep-off-the-grass order. It is not to be, so far as present appearances indicate, an enclosure of carpet beds and masses of flowers, but of broad field-like sweeps of grass relieved by old Hawthorns and grand Elms. It is pleasant to see, moreover, that these are not unapproachable for purposes of shade, but a broad walk has been formed under them and seats for hundreds of persons can be formed round them. This is just what is wanted, and the plan of "inviting" people under the trees during hot weather, instead of fencing the trees from them and having most of the seats in the glaring sun, might with advantage be extended so far as is practicable. Not



FIG. 63.—A VIEW IN PECKHAM RYE PARK.

far distant is a garden park—a huge dressed pleasure ground—of 78 acres at *Dulwich*. It is very beautiful; indeed, it could not be well more gay with spring flowers, while there is at least one semi-wild woodland scene, of *Ivy*, *Honeysuckle*, and *Clematis*-covered stumps that is worth a journey to see; but on the whole *Dulwich* is more of a garden than a park, and one of that kind is sufficient in the district.

Wisely then has *Peckham* been laid out on different lines, and there is little doubt that its character will be maintained, for *Mr. A. J. Ashmore*, the Superintendent, is a thoughtful man with an eye to appropriateness, and is not likely to clamour for masses of scarlet "*Geraniums*," groups of "sub-tropicals," and fanciful carpet beds. These may have their fitting place, but it is not at *Peckham*, and such flowers as may be introduced there should be of a homely nature—something to brighten and sweeten, as disposed in a happy informal way.

But *Peckham Rye Park* cannot be quite complete till a small estate "falls in," as it will do in due time; and when it does London will have a park that is quite unique. This estate is a forest jungle of fine trees and luxurious undergrowth. It has been in the hands of a lover of Nature, who has tenanted it with peacocks, pheasants, and rabbits, while it is alive with feathered songsters, and even the nightingale's trill is often heard. And all this practically in London! It is something to possess, to cherish, and preserve. In a clearance between the trees is a real old-time garden—vegetables, hardy flowers, and shrubs appearing each to have about an equal right of space. Though the combination is unusual it does not appear incongruous. When the change comes the vegetables will scarcely be wanted, but the clearing amid the trees will be an ideal place for a real genuine old-fashioned English garden, of which there is not one in any of the parks of London.

One of the most pleasing views in this park is that so well portrayed in the illustration (fig. 63), for which we are indebted to the courtesy of our excellent contemporary *London*. As will be seen it shows a glance across the lake away through the trees, a glimpse being caught of the bandstand on the *Rye*. The border of plants on the margins may be

readily seen, while butting from the side what appears to be a promontory, but which is in reality a miniature island, also occupied by plants, though their right of possession is already disputed by two stately swans, which glide over the smooth surface of the water, or rest on the island above named. Let us hope that both the swans and the plants will thrive as well as they at present promise to do.

A pleasant nook has been formed in a small clump of trees by forming a water bed at the bottom, in which Water Lilies already appear to be quite at home. On the little banks old tree stumps, up which Ivy and Honeysuckle are climbing, lend an uncommon charm to the scene. Another corner somewhat after the same style has grass-grown banks leading down to the water, by the sides of which the common Forget-me-not is growing, and will, no doubt, be a fine sight in the course of a few years. From this wanders a charmingly cool-looking brook overhung by trees and leading to the lake.

A good deal of planting has been done at Peckham, mainly in a necessary outer belt of trees of various kinds, also flowering and evergreen shrubs, and it is gratifying to note how trifling is the few which have failed out of the thousands that have been put in (some very late), and certainly more might have been expected to collapse. Careful planting, with subsequent watering in the time of need, and pruning—an important item—has brought about the satisfactory result.

Altogether the park is a fine one, and of its style has not an equal in London. It will, no doubt, be visited by many thousands of people during the coming summer, and if the numbers which congregated on Monday last to be present at the opening ceremony may be taken as a criterion, it bids fair to become, what it thoroughly deserves to be, one of the most popular "lungs" of the metropolis.



MILDEW ON ROSES.

THERE are two serious diseases among Roses, and probably the least under our control of the numerous enemies to which our favourite flower is subjected—mildew—may be killed; but unless we can secure more equable temperature—a desideratum entirely beyond our control with open air culture—we are not likely to do much permanent good by the adoption of such rigorous measures as are necessary to kill the disease which already exists. We may, of course, afford considerable protection from keen winds by the judicious use of plants and walls, but this does not entirely exempt us from those sudden declines in the atmospheric temperature we are so often visited with. Still, if we employ remedies early and are fortunate enough to escape a further spell of the same weather which induced the primary attack there is a chance of curing the disease. But once allow the germs to become established and the season's beauty is practically ruined.

Not only have the atmospheric variations much to do with mildew, but a check of any kind, such as from drought, will also be a fruitful source of this insidious disease. All but the atmosphere is more or less in our own hands out of doors, while under glass there is little excuse for the presence of mildew where a structure can be devoted to Roses alone. It is not so much a cure that is wanted as a little more thought and trouble towards prevention. With the large number of reliable insecticides upon the market we have no difficulty in keeping our plants clean provided due care is given to watering and ventilation. Whether the check arises from drought or the reverse, from the application of too strong a dose of any stimulant, or from sudden atmospheric changes, mildew is sure to be a close follower.

I find no solution more effectual and cheaper than a little flowers of sulphur mixed with a very weak solution of any favourite insecticide, and adding to this a tablespoonful of petroleum. It is important to bear in mind that the former of these additional ingredients quickly goes to the bottom, while the latter as rapidly comes to the surface. This renders frequent stirring during application a necessity, and one must not think the manner of syringing is of little moment when once the solution has been prepared. Use it weak, freely, early, and keep the whole well stirred whilst applying.

CANKER.

I do not believe there is any cure for this disease. Even when we fancy we have done so, the plant often takes the complaint as bad as ever. Another reason for my belief I found upon the fact that several plants may be attacked to the same extent, yet one or two out of the lot will often struggle on without any apparent harm for some seasons longer than the remainder. Until we are certain of its cause, I do not think we shall be any nearer a reliable cure than at present. If it is soil alone, why do other plants under exactly similar conditions fail? and when we find them showing it upon all stocks, the persons who quote a certain stock or stocks as its cause are bold. Nor do I see how a combination of stock and soil can safely be laid down as the cause of canker, for we often find a plant upon one stock badly attacked, and yet another plant by its side, and upon the same stock, is quite exempt from the disease. Others say it proceeds from what they are pleased to call the interference with balance of growth. Then why is it that

whether we make a practice of hard pruning a climber immediately it has flowered and while the roots are in full activity, or whether we let the plant grow unmolested, canker is equally likely to put in an appearance?

Canker attacks *Maréchal Niel* more than any other Rose, but I think *W. A. Richardson* is almost as great a victim. We find it upon a large number of Roses. Turning to the Hybrid Perpetuals we find canker upon *Marie Verdier* and others. These often refuse to grow upon the *Manetti*. Both stock and Rose seem to be the cause of this disease under varying conditions. In one case the stock swells and develops the disease first; in another instance, we find the Rose growth is the first to exhibit canker. For example, if we work *Marie Verdier*, *Captain Christy*, or any other ordinary growing variety subject to this complaint, upon a strong-growing stock we find the Rose producing a canker-like excrescence. In other cases the stock swells over the Rose growth and constricts it; then we find canker several feet above the junction of stock and Rose, so that this would certainly seem to be no more the real cause than soil.

A slight injury may heal satisfactorily or develop into canker, which has every appearance of being the same as that found at the base; while to confirm this we have similar results in the growth beyond the affected part. I would cut away all cankerous growth as soon as possible, and where it attacks the base of any plant would put in another young one by its side, so that the older specimens could be removed in the course of the following season.—PRACTICE.

ROYAL GARDENERS' ORPHAN FUND.

ANNUAL DINNER.

THE supporters of the Royal Gardeners' Orphan Fund held their sixth annual dinner at the Hotel Métropole on Thursday, May 10th, the Right Hon. George Robert Tyler, Lord Mayor of London, presiding. There was a good attendance, about 130 gentlemen sitting down to the tables, and it would appear that an interest is taken in this excellent charitable institution by a large number of representative horticulturists. Amongst those present were—Sir Edwin Saunders, Professor Michael Foster, Messrs. N. N. Sherwood, H. J. Veitch, P. Crowley, A. Moss, G. Paul, T. F. Rivers, H. Turner, D. T. Fish, W. Robinson, W. L. Corry, G. Bunyard, R. P. Glendinning, H. J. Cutbush, A. W. G. Weeks, J. Laing, W. G. Head, W. H. Cutbush, W. J. Nutting, T. Harrison (Leicester), J. A. Laing, J. H. Laing, C. E. Osman, B. Wynne, F. C. Bause, H. B. May, W. Y. Baker, G. J. Ingram, S. M. Segar, W. Icton, J. H. Douglass, J. Willard, G. Norman, J. Smith, G. Gordon, H. Herbst, J. Douglas, W. Marshall, P. Barr, J. Assbee, J. Hudson, J. Rochford, G. Monro, J. Sweet, R. Dean, P. E. Kay, J. Walker, T. W. Sanders, J. Kinnell, W. Poupard, J. Webber, T. Rochford, P. Garcia, R. Cannell, J. W. Moorman, W. Lowe, A. Outram, R. Barr, W. G. Cummins, and other gentlemen connected with gardening. As usual, the arrangements were carried out in an efficient manner by Mr. A. F. Barron, the Honorary Secretary.

The Lord Mayor, after the customary loyal toasts had been honoured, proposed "Prosperity to the Royal Gardeners' Orphan Fund." In doing so he detailed the history of the Fund, remarking that it was founded in 1887 by the gardeners of the United Kingdom in commemoration of the jubilee of the Queen. Its establishment was the happy conception of Mr. Charles Penny, erstwhile gardener to the Prince of Wales, and from the first the charity met with the cordial support of the horticultural community. The headquarters of the Fund were now located in the Royal Horticultural Society's Gardens at Chiswick, many of the Council and Fellows of the Society being numbered among its most generous and constant supporters. The success achieved was due in a great measure to Mr. Barron, the able Secretary, whose connection with the Horticultural Society inspired confidence amongst gardeners in all parts of the country. The objects were to make allowances of money to aid in the maintenance of orphans of gardeners of all classes. At the present time the Fund was the means of distributing assistance at the rate of 5s. per week to sixty-one fatherless children who lived at home with their mothers or other duly appointed guardians. (Hear, hear.) Thus the child received all the moral and material advantages of a useful home training, which was a very solid advantage indeed as compared with the less satisfactory and more costly orphanage system. The charity was supported entirely by voluntary contributions, the income being derived partly from annual subscriptions, which were put as low as 5s., so that every gardener might be able to support the cause, and partly from donations from employers and others interested in gardening pursuits; the amount thus received and invested being £7070, yielding an income of about £200 per annum. Local secretaries were also at work in various parts of the country collecting funds, a fact that showed the warm interest the gardeners themselves took in the charity. Last year a sum of £261 was obtained from collecting boxes and entertainments organised by gardeners themselves. The amount of money which the gardeners were able to raise among themselves, however, was totally inadequate to supply the needs of the large number of orphans left in a state of poverty; for gardeners, however thrifty they might have been, were rarely able to leave more than a small pittance for their widows and children, and that was soon exhausted. No charity, he contended, could be more economically conducted. It possessed no office, and there was no expensive orphanage with high-paid officials to maintain. The only expenditure incurred was about £50 a year for clerical work. (Hear, hear.) Everything else was done

voluntarily and gratuitously by a carefully selected Committee and officers, to whom the greatest credit was due for their careful and scrupulous management. As almost everyone who enjoyed the fruits and flowers of the earth derived pleasure from the labours of skilled gardeners, he felt sure it was only necessary for the urgent need of these helpless orphans to be made known for the sympathy and generous support of the public to be obtained on behalf of the excellent and exceptionally well managed charity whose cause it accorded him so much pleasure to plead. (Applause.)

Mr. D. T. Fish responded, and after expressing the pleasure of seeing the Lord Mayor of "the grandest city of the greatest nation in the world" in the chair, made an eloquent appeal on behalf of the orphans. He regretted, however, that some of the orphans were not present "to open the hearts and the purses" of his hearers. Regarding the Fund, the Committee had not attempted to build palaces for their orphans, because they did not want palaces, but homes. Through the liberality of the more wealthy commercial gardeners this charity had been founded, for they had contributed like princes to the Fund. Gardeners, as a body, could not do very much in the way of supporting the Fund financially, but they appealed to all who loved horticulture to support their orphans. At present there were sixty-one children on the books of the institution, but a dozen or a score were waiting outside to see if the Committee could not take them in. It rested with the company to say whether or not any one of those helpless children should be left outside. He trusted those present would contribute liberally towards the orphans' support. (Cheers.)

Sir Edwin Saunders rendered the toast of "Gardeners and Gardening," briefly tracing the history of horticulture. There was, he contended, no keener or purer pleasure in life than that which was associated with flowers, and there was, moreover, no country in the world where fruits and flowers were produced with such perfection as in our own country. It was, therefore, only proper that they should see that those who were engaged in the production have provision made for their orphans if misfortune and death overtook them.

Mr. T. Harrison of Leicester, in responding, observed that gardeners, as a class, were very industrious, and at the same time sensitive. They were, he said, not men to take advantage of trade unions, but they had a union of hearts, and took upon themselves the responsibility of providing for their brother gardeners' orphans. Gardeners had to study science, but they did not, as a rule, receive sufficient recompense for their services, and were thus unable to provide adequately for their children.

Mr. N. N. Sherwood submitted the toast of "The Chairman," remarking they were indebted to the Lord Mayor for being present that evening. His Lordship, in responding, said it gave him pleasure, and he regarded it a honour to be allowed to preside on this occasion.

Mr. Arnold Moss proposed "The Visitors," to which toast Professor M. Foster responded. "The Press" was rendered by Mr. W. Marshall, and acknowledged by Mr. G. Gordon.

The Secretary, during the evening, announced the donations to the Fund. The subscriptions included Sir J. Goldsmid, Bart., M.P., £25; Sir H. Peek, Bart., £42; Covent Garden (a few friends), £40 19s.; Messrs. Hurst & Son, £25; Mr. T. Harrison, Leicester, £25; Mr. J. Hudson, Gunnersbury, £22 1s.; Mr. J. W. Bennett, Rangemore, £15 10s.; Mr. W. G. Head (including £5 Lady Burton, £5 Mrs. Bass), £14 13s. 6d.; Mr. J. Burn, Leicester, £13; Mr. J. Willard (including £10 10s. Baroness B. Coutts), £12 2s. 6d.; Mr. W. Low, Euston Hall (including £5 the Duke of Grafton), £10 15s.; The Lord Mayor, £10 10s.; The Lady Mayoress, £5 5s.; Messrs. C. E. Osman & Co., £10 10s.; Baron Schröder, £10 10s.; Baron F. de Rothschild, £10; Mr. Prince, Croydon, £10; Mr. J. Wright, £10 10s.; Mr. A. Moss (Wrench & Sons), £10 10s.; Mr. A. W. G. Weeks, £10 10s.; Messrs. Veitch & Sons, £10 10s.; Mr. J. Adams, £10 10s.; Thames Bank Iron Co., £8 8s.; Mr. H. J. Clayton, £7 15s. 6d.; Mr. A. Pears, £5 5s.; Mr. J. W. Wimsitt, £5 5s.; Messrs. Geo. Bunyard & Co., £5 5s.; Mr. R. Dean, £6 6s.; Mr. H. J. Cutbush, £6 6s.; Sir E. Saunders, £5 5s.; Mrs. Harry J. Veitch, £5 5s.; Mr. W. Robinson, £5 5s.; Mr. N. N. Sherwood, £5 5s.; Mr. G. Cuthbert, £6 11s.; Sir T. Lawrence, Bart., £5 5s.; Mr. O. Thomas, £6; Mr. W. Crump (including £5 the Earl Beachamp), £6; Mr. G. C. Raphael, £5 5s.; Messrs. J. Laing & Sons, £5 5s.; Mr. H. Herbst, £5 5s.; Mr. A. W. Sutton, £5; Mr. W. Bertram, £5 5s.; Messrs. Wills & Segar, £5 5s.; with other sums, the total amounting to a little over £600.

MANCHESTER WHITSUNTIDE SHOW.

MAY 11TH TO 17TH.

THE annual Whitsuntide show was opened at the Old Trafford Botanical Gardens on Friday last, and there is not a doubt about its being better than those of recent years. Seldom has such a display of Orchids being brought together, nearly the whole of the exhibition house being filled with them. They are arranged in a wide bank round the sides, Palms and other ornamental foliage plants belonging to the gardens making a grand background, whilst those on the wide central stage made a charming display.

The trade was represented by choice and extensive collections from Messrs. B. S. Williams & Son, Upper Holloway; Charlesworth, Shuttleworth & Co., Heaton, Bradford; Lewis & Co. of Southgate; Cowan and Co., Garston, in the non-competitive section; whilst Messrs. Cypher and Sons and Heath & Sons, both of Cheltenham, staged magnificently

against each other in the prize classes, the former being in fine form. Amateurs were in great evidence, and although the grand collections which were staged by the late Mr. Geo. Hardy of Timperley were missing, the loss was compensated for to a great extent by two new exhibitors—Ed. Ashworth, Esq., Harefield Hall, Wilmslow, and W. R. Lee, Esq., Beech Lawn, Audenshaw. Roses, groups, and miscellaneous plants were arranged with taste in the annexe, which serves as a fine promenade. Mr. C. Turner of Slough and Messrs. Paul & Son were to the fore with Roses. Messrs. McIntyre of Darlington, Wilkes of Ashton-on-Mersey, and Ker of Aigburth were seen at their best in grouping; while Dicksons, Ltd., Chester, have perhaps never put up such a collection of cut flowers. Messrs. F. Sander & Co. had a small collection of new and rare plants and thirty pots of *Bougainvillea glabra* Sanderiana. The prize list was a very liberal one, comprising some eighteen silver cups, fourteen of which were valued at 10 guineas each, others being money prizes of £30, £20, and £15, with many more of exceptional value. It is worthy of mention here, as showing the energy displayed by Mr. Findlay in these great shows, that during his thirty-five years' connection with the gardens there has been offered in prizes upwards of £47,000.

Class 1 was for the best collection of Roses in pots arranged for effect with other plants of a decorative character. Here Mr. Turner of Slough took honours; his best plants were Crimson Rambler, La France, Camille Bernardin, Mrs. J. Laing, and Comtesse de Serenye, these being arranged in a natural manner, with small Palms interspersed. Messrs. Paul & Son, Cheshunt, were second, and a noted amateur, Jas. Brown, Esq., Heaton Mersey, being third. Class 2 for twenty Roses in pots brought only one competitor, Messrs. Paul and Son, who won the silver cup presented by Mrs. Rylands. For twelve Roses in pots (amateurs), the first prize being a 5-guinea silver cup given by Samuel Armitage, Esq., J.P., and which was secured by Jas. Brown, Esq., for a meritorious collection. Hardy herbaceous and Alpine plants, although not profusely flowered, were well grown, and in healthy condition, R. P. Gill, Esq., Heaton Mersey, securing the silver cups in the open and amateur classes, which were given by Sir Humphrey de Trafford, Bart., and James Brown, Esq.; Messrs. Caldwell & Son, Knutsford, and Mrs. Hodgkinson, Haigh Lawn, Bowdon, taking second positions. The silver cup presented by Thomas Craven, Esq., J.P., for eight stove and greenhouse plants was easily won by Mr. James Cypher with admirable specimens, profusely flowered; Mr. G. Wilkes, gardener to Miss Lord, Ashton-on-Mersey, was second, and Mr. J. McIntyre, gardener to Mrs. Pease, Darlington, third. For ten Azaleas in bloom a silver cup was presented by John W. Maclure, Esq., M.P., which Mr. Cypher had no difficulty in winning; the second prize went to Mr. G. Wilkes. James Gresham, Esq., presented a silver cup for twelve Pelargoniums in bloom, Mr. Turner winning with well-flowered plants.

For the best miscellaneous collection of Orchids in bloom, amateurs, J. Thompson, Esq., Walton Grange, Stone, Staffs, was accorded premier honours, with almost every plant of exceptional quality, particularly striking being the *Odontoglossums*, *Cattleyas Skinneri alba*, *Mossiae*, and *Laelias* in variety, with a groundwork of Maidenhair Fern and *Asparagus plumosus* proved very telling. F. Hardy, Esq., Tyntesfield, Ashton-on-Mersey, came in second with a bold arrangement; Ed. Ashworth, Esq., being third. In the corresponding class for nurserymen, Messrs. Cypher and Sons, and Heath & Sons, Cheltenham, were first and second. The former had *Oncidium Marshallianum* very good, *Vandas*, *Cattleyas*, *Odontoglossums*, and *Dendrobium thyrsiflorum* in perfect condition; the latter having a fine plant of *Cattleyas Mendeli Hardyana*, *C. Skinneri*, profusely flowered, and excellent *Laelias*. Mr. Cypher was also an easy first for collection of *Cattleyas* and *Laelias* in bloom, staging *Mossiae*, *Mendeli*, *magnifica* and *delicata*, the *purpuratas* being the best forms of *Schöcleræ*, *alba* and *regina*. Thos. Statter, Esq., Stand Hall, Whitefield, was second, having *Laelias purpurata Lindeni* and *elegans Statteriana* conspicuous. The silver cup in this class was given by the Chairman of the Council, Joseph Broome, Esq., J.P.

For a collection of *Cypripediums* in bloom, the first prize being a silver cup given by Wm. Stones, Esq., W. R. Lee, Esq., was adjudged winner with choice plants of *C. Elliottianum*, *Southgatense*, *Exul*, *caudatum*, *Hardyanum*, and *caudatum Wallisi*. Thos. Statter, Esq., was a close second, Mr. Cypher being third. Mr. Cypher won the silver cup given by the late Geo. Hardy, Esq., for a collection of *Dendrobiums* in bloom, Mrs. Hodgkinson being second. For fifteen Orchids in bloom for amateurs who have not competed before at these exhibitions, the silver cup was given by Thos. Statter, Esq., and Ed. Ashworth, Esq., came in first. W. R. Lee, Esq., was second, having fine specimens. For ten specimen Orchids in bloom the silver cup was presented by Jno. Galloway, Esq., J.P., and won somewhat easily by Messrs. Heath & Sons, their best being *Cymbidium Lowianum*, *Cattleya Skinneri*, and *Laelia purpurata*. Mrs. Hodgkinson was second with a noticeable plant of *Cymbidium Lowianum*. The silver cup given by John Wainwright, Esq., J.P., for twenty Orchids in bloom was awarded to H. Shaw, Esq., Ashton-under-Lyne; the silver cup for twenty-four Orchids in bloom, presented by M.M. Linden, Brussels going to F. Hardy, Esq. Thos. Statter, Esq., was the only exhibitor of hybrid Orchids raised from seed, the silver cup being given by Mrs. Vickers. He staged *Cypripedium Aylingi*, *niveum* × *ciliolare*, and *C. Schröleræ splendens*, a highly coloured flower, a cross between *C. caudatum* and *Sedeni*, having the habit of the former and colour of the latter.

For a group of miscellaneous plants (amateurs) grown in the township of Stretford the cup was presented by John Bowden, Esq., but

only one competed, viz., Jno. Heywood, Esq. Hardy Ferns were exceptionally good, Messrs. Birkenhead, Sale, being first, and R. P. Gill, Esq., second, for twenty varieties. In the open class for miscellaneous group of plants arranged for effect Mr. McIntyre secured premier honours for a bold arrangement. Mr. G. Wilkes and Messrs. Ker did full justice in the other positions, their work finding hosts of admirers. Extra, Mr. A. J. A. Bruce, The Nurseries, Chorlton-cum-Hardy. In the corresponding class Mr. Wilkes arranged a striking group of flower and foliage beautifully combined, Mrs. Blair, Whalley Range, being second.

The largest contributor in the trade was undoubtedly Messrs. B. S. Williams & Son, their table being about 60 feet in length, and comprised new and rare Orchids and other plants. They received first-class certificates for *Dracaena Coulingi*, *Kentia Dumoniana*, *Nepenthes Curtisi superba*, *Anthurium eburneum*, *Cannas L. E. Baily* and *Alphonse Bunnier*. Messrs. Charlesworth, Shuttleworth & Co. had *Laelia purpurata* in grand masses and profusely flowered, also fine *Odontoglossum* and *Oncidium*s. They received a first-class certificate for *Odontoglossum crispum apiculatum*. Messrs. Lewis & Co., Southgate, London, had an exceptionally good stand, which contained choice and rare plants of *Laelia purpurata Bella* and *Cattleyas Mendelli*, *Venus*, *Cypripedium Aylingi* and the plant of C. Winifred Hollington, which was certificated. Messrs. Sander & Co. were granted several certificates, and had *Dracaena Sanderiana* and *D. thaloides* for comparison. Messrs. Cowan & Co., Garston, contributed a fine arrangement; and Dicksons (Limited), were to the fore with their splendid cut flowers. Miss Hopkins, Mere Cottage, Knutsford, also showed well in this class of flowers. Waterer & Co., Bagshot, Surrey, had a good collection of *Rhododendrons*. Mr. James Pike had *Carnation Uriah Pike*; and Messrs. Laxton Bros. exhibited a grand box of fruits of *Royal Sovereign Strawberry*, also plants in pots. The usual implements were staged outside.

At one o'clock on the opening day a very large number of gentlemen met in the Council Chamber for the purpose of seeing the Dean of Rochester present Mr. Bruce Findlay with a handsome silver tea and coffee service and illuminated address, and a diamond ring to Mrs. Findlay. The chair was occupied by Mr. Tait, of Dickson, Brown and Tait, Manchester, who referred to Mr. Findlay's exceptional ability, of the good work he had done, and of the pleasing fact that the testimonial had not originated with Manchester gentlemen, but entirely with outsiders. The Dean, in making the presentation, claimed Mr. Findlay as one of his first and truest friends, expressing the hope that he would be long spared to preside over the gardens. Mr. Findlay thanked all for their kindness. A vote of thanks to the Dean and a similar compliment to the Chairman closed the interesting ceremony.—R. P. R.

SOUTHAMPTON WHITSUNTIDE EXHIBITION.

MAY 14TH.

A REALLY good exhibition, if not a large one, was that held by the Royal Southampton Horticultural Society, in their grounds at Westwood Park, in conjunction with the annual athletic festival on the above date. There were two classes for groups arranged for effect. Three competed in the class for the larger group, and as the exhibits possessed merit a good display was the result. Mr. E. Carr, gardener to W. A. Gillett, Esq., Fair Oak Lodge, Bishopstoke, was first. Not only was the arrangement most effective in combination, but the quality of the material composing it was of the highest order of merit. Grandly grown plants of various Orchids were arranged with Palms, Crotons, and *Coleus* on a groundwork of Maidenhair Fern. Mr. W. Peel, gardener to Miss Todd, Sidthorpe Lodge, Shirley, was second with a bright yet effective arrangement; Mr. E. Wills, florist, Shirley, being third.

In the smaller class, Mr. T. Hall, gardener to the President, S. Montague, Esq., M.P., South Stoneham, won premier honours. Well grown plants of *Celsia Arcturus* were employed with much taste and effect in the arrangement. *Gloxinias* were admirably shown by Mr. Carr, who easily took premier honours, as also did he for six pot *Roses* with well-flowered examples of popular varieties. *Spiræas* and *Caladiums* contributed largely to the display. Cut blooms of herbaceous plants were well staged by Mr. B. Ladhams, florist, Shirley, who easily secured first place for twelve bunches. Mr. Carr was first for twelve cut *Roses*; and Mr. Miles, gardener to W. Perkins, Esq., Portwood Park, second. Miss Kate Golding had the best arranged *epergne*.

Vegetables were most creditably staged by Messrs. Hall, Mitchell (gardener to J. Willis Fleming, Esq., Chilworth Manor, Romsey) and Miles. The premier collection contained *Potatoes Sharpe's Victor*, *Veitch's Self-protecting Broccoli*, *Wheeler's Cabbage*, *Asparagus*, and *Cucumbers*.

Non-competitive exhibits were numerous. The most important in this section was the magnificent group of shrubs, *Rhododendrons*, and hardy *Azaleas* in pots, which occupied half of one 100 feet tent, making a grand display, and reflecting much credit on Mr. W. H. Rogers, The Nursery, Bassett, Southampton. Mr. Wills staged a neat group of flowering plants, and Mr. Carr had a splendid bank of Orchids and *Gloxinias*. Mr. Ladhams sent his usual fine display of cut blooms in large bunches of herbaceous plants, such as *Heuchera sanguinea*, *Achillea mongolica*, *Saxifrages*, *Phlox setacea* varieties, *Onosma taurica*, *Camassia Fraseri*, and *Tulips*.

Not the least interesting was a collection of well preserved Apples

and Nuts from Mr. Miles; Wellington, Blenheim Orange, Annie Elizabeth, Royal Russet, Sturmer Pippin, and Flower of Kent were the most noteworthy. The Cob Nuts were marvels of perfection, in preservation, being the produce of 1891, 1892, and 1893.

The exhibition on the whole reflected credit on all concerned. The arrangements were, as they always are here, perfect under the experienced guidance of the Secretary and his assistants, Messrs. Fudge and Dallison, ably aided by the Committee.



FRUIT FORCING.

Figs.—*Early Forced Trees in Pots.*—When the first crop fruit has all been gathered remove the loose portion of previous mulching and supply well decomposed manure, which will encourage root action and assist the trees to perfect the second crop. In this they may be assisted by top-dressings of chemical manure, applying a little over the mulching at intervals of a fortnight or three weeks. If the trees have become infested with red spider or scale thoroughly cleanse them by means of soapy water and a stiffish brush, or apply an insecticide. Use the syringe freely twice a day. Supply water and liquid manure liberally at the roots, not allowing them to lack moisture nor giving it excessively, yet the supplies must be adequate and well sustained. Leave the second crop fruit low down on the growth, and keep the points of the shoots free and well exposed to light.

Planted-out Fig Trees.—The first crop of Figs on the trees started at the new year are ripening. Syringing must cease and a superabundance of water or moisture about the house be avoided. A little air should be admitted constantly at the top of the house, continuing this until the fruit is perfected, and whenever the weather is favourable a free circulation of warm air must be afforded. A good watering should be given when the fruit commences ripening, especially where the trees are large and the root space limited. The fruit should be kept perfectly dry, well exposed, with its apex as far as possible to the light, and be quite ripe before gathering, unless it is to be packed, when it must be gathered a few days sooner.

Successional Fig Houses.—Attention will be needed in stopping the young shoots at the fifth or sixth leaf to induce a sturdy habit and shoots at the right place and proper length for furnishing the trees with bearing wood evenly in every part. Crowding, however, should be avoided by removing growths that cannot have ample room for development and exposure of the foliage to light and air, rubbing off such growths early. When the shoots are sturdy and short-jointed, the terminals or extending growths should not be stopped, and only a judicious number of the side-shoots be pinched to form spurs. Strong-growing and long-jointed sappy wood is best removed, but if the trees produce much of that they ought to be marked for lifting and root-pruning, or they may have the growth checked by taking out a trench down to the drainage, cutting the roots at about one-third the distance from the stem the branches cover of trellis. This will give a sudden check, and the trees respond by concentrating their forces on reproduction, and are aiding in developing the fruit by the fibrous root action induced. Do not give so severe a check as to cause the leaves to fall, but when done judiciously summer root-pruning is better than winter, as a year is gained. Attend to syringing the trees twice daily, and water abundantly at the roots as often as required, employing weak liquid manure, especially where the borders are small.

Vines.—*Early Forced Houses.*—Where the Grapes are ripe afford fire heat only to prevent the temperature falling below 60°. Admit a little air constantly, with a free circulation when the weather is favourable. Do not allow the border to become dry, but keep it moist, and mulch with rather dry, sweet litter, both to prevent excess of moisture and keep the soil from cracking. A little moisture in the atmosphere is not injurious to the Grapes, and is highly beneficial to the foliage, which must be kept clean and healthy. Fumigation may be resorted to if thrips appear, repeating in the course of a few days. For red spider there is no better plan than the tedious process of carefully sponging the leaves with soapy water, but phenyle solution in saucers of water placed in the house is very distasteful to red spider and other pests, yet it must not be used too strong, or it will affect the young foliage injuriously. It is also useful for destroying the vegetating micro-organisms that produce disease. About a tablespoonful to a gallon of water usually suffices as a germicide and insecticide in vapour forms.

Successional Vineries.—As little fire heat as consistent with the steady progress of the crops should be employed, for with sun heat and an abundance of atmospheric moisture more real benefit is gained in a week than in a month of dull weather with the aid of fires. The Vines being in full growth the temperature may be allowed to rise to 90° to 95°, closing the house at 85°, employing fire heat only to maintain a day temperature of 70° to 75° and to prevent it falling below 65° at night, yet 5° less will do no harm but good when the weather is cold. These remarks apply only to Vines in full growth and swelling their

crops, as those that have the Grapes approaching ripening should have a rather free circulation of air, those advanced in ripening being kept cooler and drier. Air should be admitted very early in the morning, as the sun's rays acting powerfully on the condensed moisture formed on the foliage during the night usually causes scorching, unless air has been previously admitted.

Watering the borders must be attended to as required, not having stated times, but being guided by the soil's condition. More failures are the result of under than over-watering Vines, the borders being properly constructed, and the drainage complete. Water may be required twice a week in the case of Vines restricted to narrow and shallow borders, and once a week for those that have a good run of border from the time of thinning the berries until the Grapes are changing colour, but retentive soils may only require water at fortnightly or three weeks intervals. This difference must be had regard to, for there is no question about a sodden soil being injurious to Grapes, and often a prolific source of shanking. Some loams are naturally very loose, sandy, or gravelly, while others have opening material added, as lime rubbish, oystershells, and charcoal, which make them sieve-like. The consequence is the greater need of water, besides the danger attending the finish of Grapes grown on such soils through insufficient supplies of water leading to attacks of red spider and thin foliage, which does not assimilate and store nearly as much essential matter as the stout leaves on Vines in a firm substantial soil of a rather retentive nature. Such soil will require water less frequently, but in no case must there be lack of moisture at the roots throughout the swelling periods. Liquid nourishment is also more frequently required by loose and light soils than by compact and retentive ones. All will need top-dressings of some approved fertiliser, three times being advisable—1, When starting the Vines; 2, when the Grapes attain to thinning size; and 3, when the berries commence ripening, supplying 4 ozs. per square yard at each dressing and washing in lightly. If more stimulation be needed supply the manure oftener; this is better than increasing the quantity each time and at long intervals.

Late Houses.—In most places the work now on hand is considerable in thinning the berries, and it will continue for some weeks, as in many instances the Vines are only in flower. In the latter case maintain a minimum temperature of 65° to 70°, 5° more for Muscats, shaking the Vines twice a day to distribute the pollen, which will be sufficient for all but the shy-setters, and these ought to be artificially fertilised, going over the bunches carefully with a camel's hair brush and supplying pollen where it is deficient from those varieties that afford it freely. All the large berried and free-setting varieties, such as Gros Colman and Gros Guillaume, should be thinned while they are in flower, and with those that are liable to have closely set berries it is advisable to thin before the flowers expand, as a practical eye can tell which flower will set by its vigour, and the removal of the weaker strengthens those left wonderfully. While the Vines are in flower moderate moisture, with a rather free circulation of warm air, is desirable; it is also inadvisable to stop or remove laterals while the Vines are in bloom, but when the berries are fairly set remove superfluous laterals and pinch as required, both to prevent overcrowding and concentrate the supplies of nourishment on the Grapes.

Planting Growing Vines.—From now to the early part of June is a good time to plant out those raised from eyes in February or March and grown in pots or turves. The roots need not be disentangled, yet turf-raised Vines are better than potted ones, as they form a straight yet fibrous root, and are not so prone to descend deeply as those turned out of the pots with the ball entire. Compact the soil well about the balls or turves, give a good soaking with water at 90°, and mulch with about an inch of short and rather lumpy manure. Maintain a rather humid atmosphere, and shade from bright sun until the Vines become established.

THE KITCHEN GARDEN.

Early Celery.—Plants that were early pricked out in boxes or frames ought, after they once touch each other, to be quickly turned out into the trenches or beds, as the case may be. When they are sturdy and can be moved with a little soil about the roots they will experience no very susceptible check; but after they become drawn and weakly they flag badly after transplanting, and are very slow in recovering. Properly prepared trenches answer well for the production of early Celery for ordinary purposes, but if extra fine "sticks" are required then it will be found a good plan to plant either on or above the level. Trenches are too cold to hasten the growth in June, and the most rapid progress is made by those plants on raised beds. The latter should be enclosed by stout boards and strong stakes, and solid manure, fresh loam, charred soil, ashes, lime rubbish, and soot be freely mixed with the ordinary surface soil. Dispose the plants in this from 15 inches to 18 inches asunder, and see that they never become dry at the roots. Midseason and late Celery can also be similarly grown to a great size, effecting perfect blanching by means of sundry bandages of paper enclosed, if need be, by strips of canvas. In no other manner can such fine and clean stalks be had.

Pricking-out Celery.—It is a mistake to coddle Celery plants. When pricked out on beds of rich manure and soil enclosed in frames they certainly make the most rapid progress; but if, as before hinted, they are not shifted to the trenches before they become crowded they are very slow in taking to their fresh quarters. What is wanted is a hard bottom in a sunny place, and on this spread a layer 3 inches thick of nearly decayed manure mixed with loam, over this disposing a thickness of about 1 inch of fine light soil, keeping all together by means

of boards and stakes. Prick out the plants 4 inches apart in straight lines each way, give a gentle watering, and shade from bright sunshine. When large enough and before they are crowded all should be shifted to the trenches. As they are on a hard bottom they will move off cleanly, each with a good square of soil and roots attached. More plants for the later rows can also be pricked out in ordinary garden soil, with which is mixed some fine manure or leaf soil. These also if moved in good time will soon recover from any check given.

Preparing Celery Trenches.—According as Broccoli, Borecole, and Brussels Sprouts are cleared off the ground, and the old stumps should not be allowed to exhaust the ground any longer than absolutely necessary, trenches should be made for Celery. When prepared thus early the soil and manure have good time to become well warmed and sweetened, added to which the planting can be done rapidly and effectively during, it may be, a period of showery weather. To have abundance of soil for banking up the rows, from 3 feet to 4 feet spaces between the trenches should be allowed, and these latter may be 15 inches or rather more in width for a single row, and 20 inches wide for two rows of plants. If the space is limited, then the plan of growing Celery in beds may be tried. In this case the trench should be 5 feet wide, and this would hold four rows of plants. Whether the trenches shall be shallow or moderately deep ought to depend upon the nature of the subsoil. If the latter is heavy and cold do not throw out more than 6 inches of the top soil, but if of medium to light texture then 10 inches of it may well be removed. Fork good decayed manure very freely into the bottom of trench, but do not mix any clay with it, incorporating a little of the top soil with the manure instead. Another advantage attending the practice of preparing the trenches some time before they are wanted lies in the fact that the spaces between them can, after levelling, be very advantageously cropped with Lettuce, Kidney Beans, and dwarf Peas.

Celeriac or Turnip-rooted Celery.—Only large roots of this Celery are of much value either as a vegetable for salading or soups. If not already done the plants should be pricked out much as advised for ordinary Celery, and in common with the latter ought to be finally planted out before they become very large. Seeing that it is the Turnip-like root that is wanted large Celeriac should not be planted in trenches, but ought to be grown quite on the level, and a moderately rich yet firm root-run is desirable. If a clear open piece of ground cannot be heavily manured and dug in readiness for this crop, the plan of closely following early Cauliflowers may be tried. If the ground was heavily manured for the latter, and is not run together or badly trampled, all the further preparation needed will be to clear it of stalks and weeds, and to deeply hoe the surface.

Leeks.—If these are wanted extra large, clean, and early, they ought to be treated much the same as Celery. They may be planted out from boxes or pots in shallow, well manured trenches, on the level, or even above the level, and they can be much the most cleanly blanched by means of paper bandages. For ordinary purposes plants obtained by sowing seed thinly in the open will be quite forward enough for planting next month, and these can be planted either with a heavy dibble on the level or in the trenches. Leeks are not often touched by rabbits, and will succeed well in cold outside quarters. A change of site is by no means imperative, especially if the ground is early and heavily manured, and dug each season. Any old plants left may be taken up with some soil and roots, and laid in behind a north wall for future use.

Winter Spinach.—This, in many places, is rightly regarded as one of the most important crops that can be grown. A good bed is invaluable, as it can be gathered from during the winter in all but very frosty weather, and yields abundance of fine succulent leaves in the spring. To be successful with it the ground ought to be well prepared for the seed two months before it is time to sow it. Especially is this necessary in the case of any that is difficult to work, as well as those soils of a free working nature but much liable to be infested with grubs. Give the preference to a breadth of rather high ground, dress with manure freely, and dig roughly and deeply. After the surface has been baked by sunshine, and then thoroughly moistened by rain, it will crumble freely, and should then be forked over, though not to the extent of disturbing the manure underneath. Take an early opportunity of lightly turning the surface, then finally raking so as to be able to sow on or about the second and fourth weeks in August, even if the weather is hot and dry at the time.

Weeds.—A showery time has been most favourable to the growth of these, and unless checked there will soon be a mess. On dry hot days, therefore, the flat hoe should be freely used among all advancing crops. It is not merely the weeds that are seen that ought to be hoed up, but all the vacant ground should be stirred, this destroying thousands of newly germinated weeds as well as serving to keep the ground loose and open. Surface hoeing, it should be borne in mind, is a good preventive of rapid loss of moisture and consequent cracking.

GARDENERS' CHARITABLE AND PROVIDENT INSTITUTIONS.

THE GARDENERS' ROYAL BENEVOLENT INSTITUTION.—*Secretary*, Mr. G. J. Ingram, 50, Parliament Street, London, W.C.

UNITED HORTICULTURAL BENEFIT AND PROVIDENT SOCIETY.—*Secretary*, Mr. W. Collins, 9, Martindale Road, Balham, London, S.W.

ROYAL GARDENERS' ORPHAN FUND.—*Secretary*, Mr. A. F. Barron, Royal Horticultural Society's Gardens, Chiswick, London, W.

THE BEE-KEEPER.

APIARIAN NOTES.

THE WEATHER.

SINCE the thunderstorm on the 2nd inst. the weather has been of an untoward nature, the mean temperature being about 40° with north-westerly winds, hail and sleet showers. Pear and Cherry trees were shorn of their beauty in a single night, and Sycamore trees clothed with dense foliage, and richly adorned with tassels of bloom, were stripped of both; the trees so richly and fully foliated assumed more the appearance of autumn than the beginning of summer, the roads and byways being literally covered with leaves. Owing to the damage done to the trees by the wind, bees are deprived of a supply of honey from them, and their beauty is gone for a season. So treacherous and destructive has the "blizzard" been on bees, I hear from various quarters, hives which were expected to swarm early in May, that all hope is gone of them swarming at all. With our own they lay dead in thousands, and so reduced are they, that with the exception of having more brood in them, the hives contained more bees at the end of January. It appears that the severity of the storm has been local, as letters from the south speak of mild weather. Those persons whose bees have missed the honey flow from trees should feed them; but be careful to do so when it is not windy.

EARLY SWARMS.

Several swarms occurred a few miles from us at end of April and 1st of May, but the bees would have been better in their original hives. It has been, without exception, the worst winter and spring for bees I ever experienced; having no other than last year's queens they manage to pull through without dwindling or deposition of queens which is not the case everywhere. I learn many queens have been deposed, and it is probable some of these early swarms are due to that. All our hives swarmed too early last year, and too much subsequently; I hope it will be different this season. No two years being alike makes it difficult to advise or how to act to make the best and most of our hives.

My prospective plan for the coming season is, I will at the first favourable opportunity super every hive unless those intended for queen rearing as nuclei for 1895 and the moors of the present year. If they do swarm I shall not be disconcerted, but will hive them in the usual way, putting them together in twos instead of single swarms. Before taking them to the Heather I shall either strengthen nuclei with the contents of the swarm hives again, joining the bees of two swarms, or adding them to the old stocks as is most desirable. Should the season be a good one at the Clover there will be much honey to take. When this is done it prevents for a time any inclination to swarm, and puts the bees and hives in the best of order for joining.

GATHERING HONEY.

It will be observed that by the carrying out of the above plan the hives are all in the best of condition for gathering honey; but it should be remembered the old stocks must not on any account be permitted to swarm more than once. If at all possible give newly fertilised queens to them eight clear days after swarming. If there is no honey to take previous to removing them to the Heather, gorge the bees thoroughly with syrup before letting them run together. Taking one year with another in this our variable climate the above plan is safe, and perhaps on the whole most profitable.

When isolated cases of bees under other circumstances are reported a great success beginners are apt to follow the plans out, but to be disappointed. For example, in 1893 from one hive eight swarms were issued from the parent stock, nine in all. These were in the end my best hives. I took at least 400 lbs. of honey from them, keeping three as stocks. Had I stated the result without details it would have created a desire in some to attempt the same plan, but instead of following out bee-keeping on such lines I try to avoid it. The protracted fine season favoured it, and as I had an abundance of empty hives I took the advantage of it as a lesson to show that bees swarming will gather honey, but at all times one swarm from each stock is the safest towards having the most profitable hives, and with the least disappointment.—A LANARKSHIRE BEE KEEPER.

TO CORRESPONDENTS

*All correspondence should be directed either to "THE EDITOR" or to "THE PUBLISHER." Letters addressed to Dr. Hogg or members of the staff often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post, and we do not undertake to return rejected communications.

Diseased Rose Tree Foliage (F. C. C.).—The samples of diseased Rose tree foliage arrived in a shrivelled, crushed condition. We are, therefore, able to discover nothing but spores and headless hyphae of a fungus, which appears to be those of *Peronospora sparsa*. If you will send fresh specimens packed with damp moss secured round the lower part of the shoot or footstalk of the leaves, and the upper part enveloped in tissue paper—not cotton wool, we shall be pleased to examine them and give you the best assistance in our power.

Palm Roots above the Soil (F. G.).—It is not unusual for a portion of the roots of a Palm to be uncovered with soil, especially if in a pot, as the roots reach the bottom and force the plant upwards. There is no harm whatever in an inch or so of the roots being above the soil provided that it is kept properly supplied with water, but when the plant is potted opportunity should be taken to place it lower down, but it is not a good plan to bury the stem, merely covering the roots. Palms like abundance of light, yet it is better to afford slight shade from powerful sun.

Smilax (Myrsiphyllum) asparagoides (Reader).—Perhaps the freest growing and best plants are those raised from seed, which should be sown as soon as ripe. It is also increased from cuttings of the young side shoots with a heel or young shoots when about half ripe, or getting rather firm at the base, inserting in sandy soil surfaced with sand, placing in gentle heat and covering with a bell-glass, and keeping rather close and moist until rooted, then harden and place in pots. When the plants are large the roots or crowns may be divided into as many parts or growths as can be detached with a portion of root to each, operating early in the spring. A compost of good loam two parts and one part leaf, with half a part of sand, suits it. It succeeds admirably in a warm conservatory, and planted out where the growths can be trained up a pillar or rafter.

Vine Leaves Rusted (W. L. B.).—We failed to find any disease on the Vine leaves, though we examined them very carefully; indeed, there is only rust, which is confined to the under side of the whole of the leaves sent. The puckering or indentations on the upper surface are due to the contraction on the lower surface, and the black dots on the side correspond to destroyed stomata and adjacent cells. On the worst affected leaf the lower epidermis is actually peeling off, and a new cuticle formed of the underlying cells. The evil probably has arisen from the sprinkling weak liquid manure on the brick floor every evening, and it certainly is distinct from ordinary rust caused by injudicious ventilation. Discontinue the sprinkling with the manure water, and admit air rather freely in the early part of the day, but not so as to lower the temperature. The leaves are otherwise very healthy and of good texture. The hairs of the leaves are in some cases crippled, which also points to an overdose of ammonia. Brick floors should not be sprinkled with liquid manure so often as soil, as borders absorb it, and the danger is not so great.

Strawberry Plants Unfruitful—Crushing Bones—Gooseberry Suckers (T. A.).—1, Strawberries planted late last autumn and failing to flower at all this season, should not be thrown away as useless, for last year was not favourable to the plants, and being weak and late is sufficient to account for their not flowering this season. It is likely they will produce fruit freely another year, as they will have time to make and mature a good growth and crowns. The only danger is in their being runners in the first instance from unfruitful plants. 2, There is no mill that we are aware of grinding bones for home use on a small scale, but they are often broken quite small with a heavy hammer on an old millstone or anvil, and used for mixing with soil. Some persons place the bones in a tub outdoors, placing fine loam at the bottom, then a layer of bones, cover them with wood ashes, and so on in alternate layers until the tub is full. The whole should be kept moist, just as much water being used as the ashes and bones will absorb. 3, The suckers of the Gooseberries will hardly make growth enough this year for fruiting next season, but everything depends upon their size and the treatment they are given. They are not, as a rule, as good as cuttings, but they may be used, only detach with good roots in the autumn, and cut out all the buds on the stems below ground.

Winter Moth Caterpillar — Limewashing Fruit Tree Stems (Inquirer).—The description corresponds with the winter moth caterpillar, and another characteristic is that it has a "looping" gait. It is quite safe to dress the stems of fruit trees with a wash formed of lime, which should be slaked in a bucket, and enough water afterwards added to form a thin wash, and a little soot being mixed with it, its colour will not be so objectionable in appearance. Such mixtures ought to be applied in the winter or preferably autumn, as it will then act better, and not be so likely to impede the evaporation, which, however, is very small from old bark, and far less harm would be done than by the scale.

Carrot Fly and Maggot (Amateur).—You desire to know "something about the Carrot fly and maggot." The fly hardly measures half an inch across the wings when they are expanded; it is almost black or blackish-green (hence occasionally called the Negro), with transparent wings, head and legs reddish-yellow. Of this there appear to be two or three broods during the summer season, the first deposition of eggs taking place about the end of May or in June, these flies being produced from larvæ or pupæ that have lived through the winter. Like others of the group, the larvæ or maggot is legless, having a sharp head and a blunt tail, which has just above it two raised plates that aid the movements of the insect as it forms its borrows or galleries; the surface is smooth, shiny, and pale yellow. The different forms of the insect are represented in the engraving (fig. 64). Young specimens of this pest

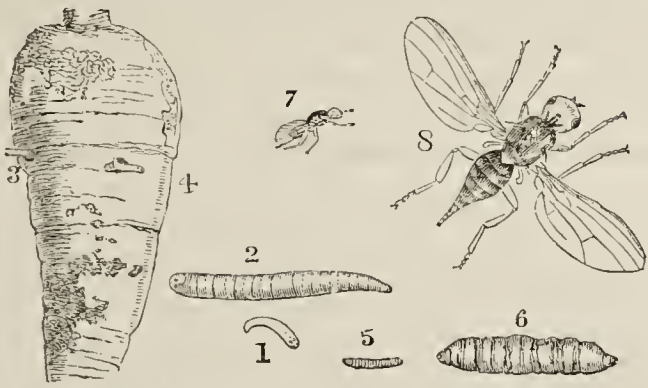


FIG. 64.—CARROT FLY AND LARVÆ.

1, 2, and 3, Larvæ natural size and magnified; 4, infested Carrot; 5 and 6, pupæ; 7 and 8, Carrot Fly, natural size and magnified.

are numerous during June, and from that date until the last Carrots are pulled in the autumn maggots are to be found where preventive means have not been taken; and even after the Carrots have been removed some will subsist upon the fibrous roots left in the soil, hence the advisability of clearing the ground thoroughly about November, well digging and dressing with gas lime where the fly has occurred. Dressing with sand that has been moistened by the addition of spirits of tar or creosote has been strongly recommended by several gardeners (a gallon is said to saturate sufficient sand for 2½ rods); this may either be forked-in during the autumn, or laid-in at the time of sowing.

Tomato Plants Flagging (X. Y. Z.).—The plant marked No. 6 is attacked at the roots and in the stem, just above the soil and extending upwards about 3 inches, by eelworm, there not being as yet any eggs or traces thereof; but the pests have penetrated the bark tissues, and caused their destruction. This parasite causes swellings on the roots and stems near the collar, and is a worse enemy than the root-knot eelworm (*Heterodera radicola*), through ulcerating the stem of the plant attacked, and causing its earlier and sudden collapse. The plant No. 1 also is attacked by the blunt-stem eelworm (*Tylenchus obtusus*), which is shorter than *T. devastatrix*. The latter also attacks the stems of many plants, likewise the leaves. It is difficult to apply anything that will reach the eelworms inside the stems above ground, but they might be wrapped with damp moss loosely to a height of about 3 inches or soil placed about them, yet it is better to use the moss, even if soil be afterwards used. To eradicate the pests is the chief thing, and that may usually be effected by watering the plants or wetting the whole soil and mossed part of the stems with soluble phenyle, quarter of a pint to 4 gallons of water. Soluble phenyle may be obtained of chemists in bottles from 6d. to 2s. 6d., "Little's" being a special preparation, and the one advised to be used, as it is non-poisonous and not corrosive. Larger quantities are sold in drums at 7s. 6d. per gallon, or half-gallon tins 4s. each. At the strength named it will not do the plants any harm, but as plants differ in hardness or endurance, we advise your trying it on a few, and ascertaining what effect it has, then you can use your judgment accordingly. It will not sterilise the soil like carbolic acid, but is almost certain to effect a vigorous growth, and if the plants are not too far gone it will generally prove as destructive to the eelworms as profitable to the plants.

Names of Plants.—We only undertake to name species of plants, not varieties that have originated from seed and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in firm boxes. Slightly damp moss, soft green grass or leaves form the best packing, dry wool the worst. Not more than six specimens can be named at once, and the numbers should be visible without untying the ligatures, it being often difficult to separate them when the paper is damp. (*G. A.*).—1, *Cerasus* (*Prunus*) *padus*, Bird Cherry; 2, a *Lonicera*, species unrecognisable; 3, *Sparmannia africana*; 4, *Fuchsia procumbens*; 5, *Anthericum variegatum*; 6, specimen insufficient, must have flower. (*J. J. S.*).—(*Enanthe crocata*, the Hemlock Dropwort. It is a deadly poison to both men and animals. (*W. Lamb*).—Apparently *Heuchera*

sanguinea. It is necessary to have better specimens to identify plants. (*An Old Subscriber*).—1, *Eucalyptus globulus*; 2, specimen insufficient; 3, *Hibiscus sinensis*; 4, send when in flower; 5, *Celsia cretica*; 6, a *Francoa*, cannot identify species without flowers. (*E. K.*).—*Lælia Brassavola Digbyana*. (*P. J. A.*).—1, A form of *Cattleya Mendeli*; 2, *Cereus grandiflorus* *Maynardi*, flower fallen; 3, possibly *Salvia pilantha*; 4, *Linum angustifolium*; 5, specimen insufficient, send when in flower.

COVENT GARDEN MARKET.—MAY 16TH.

THE holidays as usual have paralysed trade, and with finer weather supplies have been heavy.

FRUIT.

	s.	d.	s.	d.		s.	d.	s.	d.
Apples, per bushel	2	6	10	0	Peaches, per doz.	6	0	18	0
Ta-manian, per case	8	0	12	0	Plums, per half sieve ..	0	0	0	0
Cobs	45	0	50	0	St. Michael Pines, each ..	2	0	6	0
Grapes, new, per lb.	2	0	3	0	Strawberries per lb., morn-				
Lemons, case	10	0	15	0	ing gathered	1	0	3	0

VEGETABLES.

	s.	d.	s.	d.		s.	d.	s.	d.
Asparagus, per bundle ..	2	0	5	0	Mushrooms, punnet	0	9	1	0
Beans, Kidney, per lb. ..	1	0	1	3	Mustard and Cress, punnet	0	2	0	0
Beet, Red, dozen	1	0	0	0	Onions, bushel	3	6	4	0
Carrots, bunch	0	3	0	4	Parsley, dozen bunches ..	2	0	3	0
new, bunch	0	9	1	0	Parsnips, dozen	1	0	0	0
Canliflowers, dozen	1	6	3	0	Potatoes, per ewt.	2	0	4	6
Celery, bundle	1	0	1	3	Salsafy, bundle	1	0	1	5
Coleworts, dozen bunches	2	0	4	0	Scorzonera, bundle	1	6	0	0
Cucumbers, dozen	1	6	3	0	Shallots, per lb.	0	3	0	0
Endive, dozen	1	3	1	6	Spinach, bushel	1	6	3	0
Herbs, bunch	0	3	0	0	Tomatoes, per lb.	0	6	1	0
Leeks, bunch	0	2	0	0	Turnips, bunch	0	3	0	4
Lettuce, dozen	0	9	1	0	new, bunch	0	8	0	10

AVERAGE WHOLESALE PRICES.—OUT FLOWERS.

Orehid Blooms in variety.

	s.	d.	s.	d.		s.	d.	s.	d.
Arum Lilies, 12 blooms ..	1	6	3	0	Orehids, per dozen blooms	1	0	9	0
Azalea, dozen sprays ..	0	4	0	6	Pansies, dozen bunches ..	1	0	2	0
Bluebells, dozen bunches	1	0	2	0	Pelargoniums, 12 bunches	6	0	9	0
Bonvardias, bunch	0	6	1	0	Pelargoniums, scarlet, doz.				
Carnations, 12 blooms ..	1	6	3	0	bunches	4	0	6	0
Cowslips, dozen bunches..	1	0	2	0	Primula (double), dozen				
Eucharis, dozen	2	0	4	0	sprays	0	6	1	0
Gardenias, per dozen ..	1	0	4	0	Pyrethrum, dozen bunches	0	9	0	0
Iris, dozen blooms	0	6	1	0	Roses (indoor), dozen ..	1	0	2	0
Lilac (French) per bunch	2	6	4	0	Tea, white, dozen ..	1	0	3	0
Lily of Valley, doz. sprays	0	6	0	9	Yellow, dozen	2	0	4	0
doz. bunchs.	4	0	8	0	Roses (French), per dozen	1	0	2	6
Lilium candidum, dozen					Roses, Safrano (English),				
bunches	12	0	18	0	per dozen	1	6	2	0
Lilium candidum, dozen					Roses, Maréchal Niel, per				
blooms	0	6	0	9	dozen	1	6	5	0
Lilium longifolium, per doz.	2	0	4	0	Tuberose, 12 blooms ..	0	6	1	0
Maidenhair Fern, dozen					Tulips, dozen blooms ..	0	3	0	6
bunches	4	0	6	0	Violets, Parme (French),				
Marguerites, 12 bunches ..	1	6	4	0	per bunch	2	0	3	6
Mignonette, 12 bunches ..	3	0	6	0	Violets (French), per				
Myosotis or Forget-me-					bunch	1	0	1	6
nots, dozen bunches ..	1	6	3	0	Wallflowers, doz. bunches..	2	6	4	0
Narciss, various, doz. bunchs.	2	0	4	0					

PLANTS IN POTS.

	s.	d.	s.	d.		s.	d.	s.	d.
Arbor Vitæ (golden) dozen	6	0	12	0	Hydrangea, per dozen ..	9	0	18	0
Arum Lilies, per dozen ..	6	0	12	0	Ivy Geraniums	6	0	9	0
Aspidistra, per dozen ..	18	0	36	0	Lilium Harrissi, per dozen	15	0	30	0
Aspidistra, specimen plant	5	0	10	6	Lobelia, per dozen	4	0	6	0
Azaleas, per dozen	18	0	30	0	Lycopodiums, per dozen ..	3	0	4	0
Cineraria, per dozen ..	6	0	9	0	Marguerite Daisy, dozen ..	6	0	12	0
Dracena terminalis, per					Mignonette, per doz. ..	6	0	9	0
dozen	18	0	42	0	Musk, per dozen	4	0	6	0
Dracena viridis, dozen ..	9	0	24	0	Myrtles, dozen	6	0	9	0
Ericas, per dozen	9	0	24	0	Nasturtiums, per dozen ..	1	6	6	0
Enonymus, var., dozen ..	6	0	18	0	Palms, in var., each	1	0	15	0
Evergreens, in var., dozen	6	0	24	0	(specimens)	21	0	63	0
Ferns, in variety, dozen ..	4	0	12	0	Pelargoniums, per dozen ..	9	0	18	0
(small) per hundred	4	0	8	0	scarlet, per doz. ..	4	0	6	0
Ficus elastica, each	1	0	7	6	Roses, various, per dozen..	12	0	36	0
Foliage plants, var., each	2	0	10	0	(Fairy), per dozen ..	9	0	12	0
Fuchsia, per dozen	6	0	9	0	Spiræas, per dozen	6	0	12	0
Genista, per dozen	6	0	12	0	Stocks, per dozen	3	6	5	0
Heliotrope, per dozen ..	6	0	9	0					

Roots in variety for planting out, in boxes or by the dozen.



SMALL HOLDINGS.

MUCH that is vague and misleading has been advanced in support of the popular cry for small holdings, simply because the true value of such holdings in the economy of land management is not generally understood. When it is we have no doubt that much more respect will be accorded to landlords under whose generous fostering care so much good work has been done. In holding out a helping hand to workmen employed upon their estates they have enabled the men to help themselves by dint of thrift and industry. The best men

are always eager to avail themselves of an offer of a plot of land. In this, as in everything, example tells; others follow their lead, and insensibly become better men than they ever could have been without such an incentive to exertion; as they grow keen in their efforts and in self-respect they become better workmen, and more valuable to their employers. As an example of this, the editor of the "Land Agents' Record" gave an instance last year of a farm of 150 acres which fell in hand, and which the owner decided to let out in allotments. It was divided into plots of 1 acre. In the course of years the more thrifty energetic men became tenants of two, three, or more plots, one of them at the last inspection actually farming 12 acres. Careful inquiry proved that every plot of the land was being farmed at a profit, and on inquiring of a large neighbouring farmer whether the fact of these men holding allotments militated against their usefulness as farm labourers, he replied, "They are the best men in the neighbourhood. They can ditch, hedge, stack, thatch, plough, and do everything as it ought to be done; and I assure you they are the very men who, as labourers, give the farmer the best value for his money."

Another and even more remarkable example is to be found upon the estate of Mr. W. J. Harris, Halwill Manor, near Beaworthy, in North Devon. On this estate, acquired some twenty-two years ago, encouragement to hire land was held out to the cottagers; those who desired to do so had land adjoining their cottages allotted to them, and cow houses were built for them. The first trials were so successful that the scheme extended till there were twenty small holdings upon the estate, only one failure having to be recorded during some eighteen years. During that time some of the holdings have grown from 3 or 4 to 20 acres, in one exceptional instance to upwards of 40 acres. What is perhaps even more remarkable is the fact that most of the additional acreage was moorland, brought into such excellent cultivation by the tenants that really profitable crops are grown.

About the time of the purchase of Halwill Manor we were well acquainted with many small plots which had been wrested from the wild waste of Ashdown Forest, in Sussex, by the "Foresters." Outside the enclosures was a wild growth of Gorse, Heather, and Bracken; inside was flourishing pasture, vegetables, and fruit, won from the apparently sterile land by the industry of workmen mainly employed upon farms adjoining the forest.

At Halwill most of the tillage appears to have been wisely confined to the cultivation of enough land for the home supply of vegetables and for the production of Oats and roots for the live stock. The remainder of the land is in grass, part temporary and part permanent pasture; butter, poultry, and pigs being the produce for sale. This has been well done. As most of the land is in grass there is but little labour, and the women are able to give the necessary attention to cows, pigs, and poultry, as well as the dairy, while the men are away at their daily employment upon the large holdings of the estate.

A kindly spirit of co-operation prevails among this interesting and instructive group of small holders. They assist each other upon occasions in getting through extra work, and one of them has risen to the dignity of a dealer, to the general profit and convenience, as he purchases the butter and poultry and disposes of it at neighbouring towns. He began as a day labourer, saved enough money to purchase a cow, was allowed to hire enough land for its maintenance, then went steadily on till he had quite a herd of cattle, some sheep and pigs, hired the defunct public-house, turned it into a shop, and became a thriving dealer.

In all this progress the fostering influence of a generous landlord has told. Without it the thing would have been impossible; with it small holdings are a success, full and entire. The rents are for arable land 12s. to 15s. per acre, for pasture 30s. to 50s., and for moorland 5s., the landlord paying tithes, rates and taxes. For cottagers with really useful gardens and outbuildings the rent is £4 to £8 a year, according to size. This appears to be a

judicious arrangement, for by making the tenant only liable for rent much complication is avoided.

To make such a scheme really successful there must be regular employment for most of the men. It has been found that those having holdings of only three or four acres require, practically, full employment, only an occasional day or two being wanted for pressing home work; others having 20 acres can give about half their time to other work; and the man of 40 acres, with a moderate family, has his hands full and can do well. That the conditions or advantages at Halwill are somewhat exceptional must also be remembered. The existence of moorland rendered it possible for the men to hire acre after acre and so extend their holdings indefinitely. It was obviously to the landlord's advantage to encourage this. Before it was reclaimed it was let at 5s. an acre, after reclamation it became worth from 10s. up to 40s. an acre, so that the reversionary value of the property is constantly improving. But he has no intention of taking advantage of the men's thrift and industry. He has offered all of them leases for their lives, but not one of them has thought it worth while to take advantage of this offer; they have perfect reliance upon the landlord's promise that they will not be disturbed as long as they live if they continue industrious and pay the rent regularly.

WORK ON THE HOME FARM.

Some pasture which came in hand last Lady Day has been set in order for the season so far as was possible. The late tenant had no written agreement, but it was understood that he was to keep up fences, gates, and ditches, and keep the land in good order. None of these things were well done, and we have had fences repaired, ditches scoured, a set of new field gates and wickets, and a dressing of chemical manure on the pasture. A lot of ant hills must be left till the autumn, but Thistles can and are being dealt with now. The local custom is to cut them off with a scythe once during the summer, just as though such pests were a chronic evil to be made the best of. Our idea is to root them up, and so destroy them altogether; this is being done while the land is softened by rain, so that the work can be got through easily and quickly. Some beds of Nettles will also be uprooted and destroyed—not left, as hitherto, year after year to cumber the land and make work.

The field gates are exceptionally strong. They have the tops and ends of oak, with bars and braces of pitch pine, all bolted together with screw bolts having nuts screwed on. The gate irons are made to impart additional strength by holding the top and ends together. The fastening is the old upright spring and catch, which in our opinion is the best of all, as it does not get out of order if the gate drops a bit, and is equally handy to open whether one is walking or riding. The gates cost with a set of irons and a spring and catch 20s. 9d., a pair of posts of American pitch pine cost 13s. 6d., or the whole thing complete for £1 14s. 3d.

If there is a choice, by all means keep sheep off luxuriant pasture now, and have them in folds on Rye, Sainfoin, or Lucerne, as they invariably thrive better on such sound food. A diet consisting entirely of young grass is so relaxing that the strongest hoggets kept upon it suffer severely from scour. The considerable advance in value of sheep should be an incentive to do all that is possible for them. Look closely after every case of foot rot, it always yields to persistent kindly treatment. All bad cases should have attention three or four times a week.

METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude, 111 feet

DATE.		9 A.M.				IN THE DAY.				Rain.	
		Barometer at 32°, and Sea Level.	Hygrometer.		Direc- tion of Wind.	Temp. of soil at 1 foot.	Shade Tem- perature.		Radiation Temperature		
			Dry.	Wet.			Max.	Min.	In Sun.		On Grass.
		Inchs.	deg.	deg.		deg.	deg.	deg.	deg.	Inchs.	
Sunday	6	29.798	54.3	46.8	S.W.	50.4	62.2	45.8	97.9	38.0	—
Monday	7	29.858	54.7	48.2	W.	50.8	64.6	40.4	115.8	33.4	—
Tuesday	8	30.043	56.1	50.2	S.W.	51.7	60.8	43.9	92.9	37.4	—
Wednesday	9	29.859	53.8	48.2	S.	51.9	60.0	50.1	98.9	46.0	0.094
Thursday	10	29.801	54.8	49.7	S.	50.9	58.6	41.1	103.9	33.6	0.414
Friday	11	29.800	53.4	49.1	S.W.	50.1	58.4	40.3	80.4	31.9	0.218
Saturday	12	29.949	50.0	47.3	N.W.	50.2	58.5	48.1	97.8	45.0	—
		29.884	53.9	48.5		50.9	60.4	44.2	98.2	37.9	0.726

REMARKS.

- 6th.—Generally sunny, but cloudy at times in afternoon; bright night.
7th.—Occasionally cloudy in morning, but bright sunshine almost throughout.
8th.—Occasional bright sunshine, but frequently overcast, and at times threatening.
9th.—Generally overcast, with rain from 3.35 P.M. to 6 P.M., and in evening.
10th.—Bright sunshine early, and occasional gleams in the day, but generally overcast, and frequent heavy showers.
11th.—Bright sun early; overcast from 9 A.M., heavy rain from 2 P.M. to 5 P.M., and showers later.
12th.—Drizzle early, and overcast till noon, lovely afternoon, and almost cloudless after 3 P.M.

Temperature still near the mean, rain rather above it. — G. J. SYMONS.



WRITING in advance of the Summer Show of the Royal Horticultural Society we cannot but regret the sudden departure in the weather, from bright sunshine and pleasant breezes of a week ago to harsh dry chilling easterly winds of an altogether discomforting character. A continuance of such shivering conditions must of necessity prejudice the Show both in respect to the enjoyment of the flowers and music by visitors, and the risk of injury to choice and valuable plants, for it is the rule for the choicest and the best to be displayed on the occasions of the Society's Shows in the Temple Gardens on the famous Thames Embankment. We are hoping for a change of a favourable nature, as only summer-like days are wanting to make the event a brilliant success.

For the purpose of these summer exhibitions it was a stroke of fortune that placed the disposal of such an admirable site—some 4 acres of lawn not altogether treeless—in the centre of the largest city in the world at the disposal of the Royal Horticultural Society, and it is not possible to appreciate too highly the favour granted by the authorities of the Inner Temple. In the privilege afforded a favour was conferred not only on the Society, but the citizens, who were thus enabled to inspect and enjoy the richest floral treasures the country could supply and display in the most easily accessible position in London. It was not without some misgivings that the grant was made for the use of the cherished lawn, which it was feared would be injured in the preparations, and by the concourse of visitors, and so it would have been but for the special care that was taken, and the flooring of all the tents and approaches thereto with boards. This was a work of some magnitude, the lawn covered probably exceeding 30,000 square feet; but it proved a wise precaution, for on the occasion of one of the first, if not the very first of these shows, the rain fell in torrents on the opening day, and showers were frequent on the second, yet no damage was done, the turf being as smooth and fresh as ever when the protection was removed. This immunity from injury smoothed the way for the future, and fortunately, except on one other occasion, the best flower show weather has prevailed.

Each year the exhibits have been more numerous than before, or would have been if space could have been found for them. This, great as it was, being inadequate, led to the crushing and crowding of plants, not a few collections being spoiled in effect by huddling. Last year the show was a veritable crush of plants, flowers and people. This year an additional marquee is provided, yet the crowding of exhibits will perhaps be as noticeable as ever; and of visitors, too, should the bitter winds depart and clouds disperse. Then shall we have a brilliant scene.

It seems a pity that the number of plants cannot be better adapted to the space at disposal. It is often said that great shows cannot be had without large money prizes. This may be so in the provinces, but is not so at the Temple. Here, without money prizes, the clamour has been for more space, and because this could not be apportioned in many instances, more plants were crowded in than could be properly displayed. Perhaps the disappointments of various exhibitors could be mitigated, if not prevented, if the conditions relating to space were more precise. Experience has been gained now to enable something like a definite extent of tabling to be apportioned, or limits prescribed

that should not be exceeded, without the least fear of vacant areas occurring under the long stretches of canvas. The desire to exhibit the most and the best at shows, where all the "best people" attend, is so great that all possible space that can be found in the Temple Gardens is sure to be occupied.

It is not a question of money prizes at all. Wealthy amateurs are abundantly satisfied with the cups and medals that they win so well, and the same may be said of professional horticulturists. The latter look very naturally and properly to a greater dispersion of plants and flowers that are provided by their enterprise and skill. Such shows as those under notice are brilliant emporiums of all that is most beautiful and rare in the floral world. The bringing together of the treasures shows how great are the resources of the providers, and also how great the admiration for what they find it necessary to display for meeting the constantly increasing demand. It is the same on the continent. The great shows there are not the result of large money prizes. Amateurs exhibit because they derive pleasure from doing so, and also afford pleasure to others; while professionals find it advantageous to be represented by the best productions of their skill. Yet their shows and ours are wholly different. Abroad we find magnificent Palms and such-like plants, with fine flowering specimens, yet (Orchids apart) in limited variety, and all displayed with consummate taste to make a magnificent spectacle. Still, we do not find at shows abroad any approach in numbers, quality, or variety to the popular garden and greenhouse flowers that are displayed at great exhibitions at home.

But our continental friends make the most of what they bring together, while we do not. Their shows are picturesque—ours are formal; and perhaps the most formal of all are those arranged in the Temple Gardens. There appears no help for this. It seems to be a question of making the huge canvas tents to fit the space, and the collections of plants to fit the tents. If it could be otherwise—if a sufficiently extensive covered area could be found for displaying to the best possible advantage the wealth of plants and flowers we have at disposal, we might produce a floral spectacle that could not be excelled in magnitude, splendour, and diversity in any part of Europe. Last year a visitor came direct from the Paris show to our display in the Temple Gardens, and he did not hesitate to say that, "in numbers, richness, variety, and value of plants, our exhibition was overwhelming; but for taste in effect and picturesqueness it sank very low in comparison, and he could only regard it as a great show spoiled by cramming." Those who have seen great continental exhibitions in Paris, Ghent, and such an one as was provided at Antwerp last week, could not in the least be surprised at the remarks cited. We do not make the best nor the most of our material, nor is it possible to do so in a series of isolated tents. But even in these the massing is commonly overdone; a less number of plants, of a distinctly superior character, would, in many instances, make a more meritorious display than by the habit of packing so many together, which largely prevails, though we are not without hope of seeing some improvement in the great show now in preparation.

Except in the artistic association of plants, however, we have no desire to point to the superiority of collections of one country over another. The world is placed under tribute for furnishing the richest and rarest plants obtainable, and it is only by a combination of the best examples of culture from various countries that the full beauty of the vegetable kingdom can be demonstrated, as in the case of a grand and really international show. Shall we ever have one in England? Curiously, just as the last lines were written comes a note from "D.," headed "A British International Flower Show," the writer of it going on to say—

"This heading may seem to be somewhat of an incongruous one, but at least it clearly conveys my meaning. It is—When is Great Britain to have its turn in providing once more a great International Flower Show? I have been reading your glowing

description of the Great International Exposition at Antwerp, and although that is of a much more general character than I suggest, yet it is humiliating to us here that one of the foremost horticultural countries of the world should not be able to do in the way of furnishing a grand Flower Show of literally all nations in the same way that it is so frequently done on the continent. Are we afraid of foreign competitors? I should think not. Do we lack public spirit and energy in this direction? I fear it is so. Why we cannot have a grand Flower Show for all the world to take part in at least every ten years is difficult to understand. But two years hence and it will have been thirty years rather than ten years since the previous great International Show was held, a grand Show, too, and as events showed a magnificent success; but we could now with ample scope and support beat even that Show into a cocked hat. Let us initiate a movement in favour of a magnificent International Flower Show in London in 1896, two years hence. There is ample time for doing it, and every section of horticulture at home and abroad must be invited to take part. Without exception the grounds and building of the Crystal Palace present the finest possible place for such an Exhibition. None better in or near London can be obtained. None better can be desired. What do horticulturists everywhere say to the project?"

On the proposition, put so clearly and not inopportunately, we have no doubt there are many horticulturists who will think if they do not say—If a really earnest lead were taken by the Royal Horticultural Society to concentrate the resources of the leading provincial horticultural societies of the kingdom on the object in view, and a great co-operative endeavour were made in alliance with the Crystal Palace Company, that a floral gathering as great as the world has ever seen would be provided in the best place in the kingdom for its adequate representation—something as grand and inspiring in its way as is the magnificent Handel Festival in the musical world.

Our correspondent's closing words may well be repeated: "What do horticulturists everywhere say to the project?"

THE TEMPLE SHOW.

MAY 23RD, 24TH, AND 25TH.

As indicated in the foregoing article the magnificent Exhibition of Orchids, greenhouse, and stove plants, hardy flowers, fruit and vegetables, which is held annually under the auspices of the Royal Horticultural Society in the gardens of the Inner Temple, London, E.C., is generally recognised as one of the principal horticultural events of the season. For seven years in succession this splendid display has been provided to the delight of thousands of visitors, and the show which was opened yesterday (Wednesday) at 12.30 P.M., by H.R.H. the Duke of York, proved no exception to the rule. Notwithstanding the cold weather that prevailed for nearly a week prior to the date mentioned the exhibits were of an unusually choice character, and were brought together in large numbers. Many noted growers were represented by superb collections, and, as is customary here, the huge tents were filled almost to overflowing, everything being done that could be done for the accommodation of the produce.

For the purpose of affording the uninitiated some idea as to the magnitude of this Show it may be of interest to mention the number and size of the marquees in which the exhibits were arranged. On previous occasions four tents were employed, these measuring respectively about 170 by 32 feet, 150 by 40, 160 by 60, and 150 by 32 feet, representing a ground area of 25,840 square feet. To many persons this would appear ample provision for a flower show, but it was not, as that held in the Temple Gardens is of no ordinary dimensions, and to avoid the crush that was experienced last year the authorities this season wisely erected another marquee 90 by 30 feet. This makes a total of something like 28,540 square feet. Large as the space may seem to those readers who are unacquainted with this grand Show, not a foot of it was wasted, the whole of the tents being filled with a splendid assortment of exhibits. Orchids, as usual, were extensively shown, the same applying to groups of greenhouse plants and hardy flowers. Fruits and vegetables were exhibited in excellent condition, and if less numerous than the flowers, attracted the attention of the visitors. In some departments there may have been a slight depreciation, but this was not perceptible to general observers, and the display, on the whole, may be characterised as being wonderfully fine. The leading

features are detailed in the following report, so far as the short period that elapsed between the opening of the Exhibition and the time of going to press would permit.

ORCHIDS.

Notwithstanding the unpropitious weather which prevailed in the morning of the opening day, Orchids were perhaps more extensively shown than at any previous Exhibition. The majority of them were arranged in the centre of the largest tent, and here they made a most beautiful display. An authority on such matters expressed the opinion that these charming plants have never been seen in such large numbers at any show in any country, and other persons corroborated the remark. Passing down the right of the table in the marquee referred to, a splendid collection, staged by Messrs J. Cypher & Sons, Cheltenham, comes in view. This contribution comprised many choice species and varieties, which were remarkable for their brilliancy of colour. Some fine forms of *Cattleya Mossiae*, *C. Mendeli*, and *Lælia purpurata* were conspicuous. Amongst the latter were *L. purpurata alba*, *L. p. Russelliana*. *Odontoglossums* and *Cypripediums* were also well represented, *C. Chamberlainianum* being noticeable amongst the rest. With a background of Palms, and large specimens of *Lælias* and *Oncidium*s placed at intervals, the whole made a bright and charming display.

Messrs. W. L. Lewis & Co., Southgate, N., had a fine and effective group, chiefly consisting of forms of *Odontoglossum crispum*, *Cattleya Mendeli* and *C. Mossiae*, *Lælia purpurata*, and *Oncidium*s. The spikes of the *Odontoglossums* were exceedingly good, and the same applies to the *Cattleyas*. A form shown as *C. Mendeli Lewisii* was unusually fine, the lip being very richly coloured, and a variety named *C. Mendeli grandiflora* was also much admired. A charming *Cypripedium* shown under a bellglass also attracted notice. This was *C. Aylingi superbum*, a medium sized but richly coloured flower. *Lælia purpurata Ashtoni* was also exhibited in excellent condition, and the many forms of *C. Mossiae* with beautifully coloured blooms added interest and effect to the group.

W. C. Walker, Esq., Winchmore Hill (gardener, Mr. G. Cragg), contributed a smaller but not less interesting collection. In this group were some well grown *Oncidium*s and *Odontoglossums*, while *Lælias* and *Cattleyas* were extensively represented. A large specimen of *Sobralia macrantha* in the centre proved effective, and stood out conspicuously amongst the other plants, which were tastefully associated with Ferns.

A splendid group of choice Orchids was arranged by Messrs. B. S. Williams & Sons, Upper Holloway, N. This contribution included some magnificent forms of *Lælia purpurata* and *Cattleyas* in variety. *C. Mossiae* and *C. Mendeli* were noticeable for their size of bloom and richness of colour, which formed a pleasing contrast to the huge spikes of yellow *Oncidium*s, pink *Miltonia vexillaria*, and quaint *Cypripedium*s. Messrs. Collins & Collins, Willesden Junction, sent a remarkably fine group of *Cymbidium Lowianum*, margined with plants of *Lælia purpurata* in variety. The *Cymbidium*s were large and bore enormous spikes of flowers. A. H. Smee, Esq., The Grange, Wallington (gardener Mr. W. G. Cummins) sent a collection of *Cattleyas*, *Lælias*, *Odontoglossums*, and other Orchids, which were admirably arranged with Palms and Ferns, the whole making a fine effect. The *Cattleyas*, in excellent variety, bore a large number of flowers extremely rich in colour.

As usual Baron Schröder, The Dell, Egham, sent a beautiful and diversified collection, which included some of the choicest of species and varieties. These were effectively arranged under the supervision of Mr. H. Ballantine, and contributed largely towards the effectiveness of the Show. Conspicuous amongst those exhibited was the famous plant of *Cœlogyne Dayana*, for which a silver medal and first-class certificate were awarded last year. The plant bore upwards of two dozen spikes, on some of which there were fifty flowers. In the group some charming *Odontoglossums*, *Masdevallias*, *Cattleyas*, and *Oncidium*s were to be seen. It is impossible in the time at our disposal to enumerate all the beautiful forms exhibited by Baron Schröder, but a few of the best may be mentioned. These comprised *Odontoglossum crispum excelsior*, large and richly coloured; *O. crispum Rex*, *O. crispum Wolstenholmiæ*, *O. triumphans* var., *Masdevallia ignea*, *M. coccinea* brightly coloured, and a variety of *M. Harryana*, *Vanda suavis*, *Lælia purpurata* in variety, *Cattleya Lawrenceana*, and a number of plants of *Vanda teres*. The last-named were arranged with a groundwork of *Adiantum*, and very much admired.

Sir Trevor Lawrence, Bart., Burford Lodge, Dorking (grower, Mr. White), was also to the fore with Orchids. These were rich in colour, and if some of the plants were a trifle smaller than those of other exhibitors, were none the less interesting, inasmuch as the group included some of the rarest species and varieties in cultivation. They were, moreover, arranged in excellent style, and produced a very fine effect. Especially good were the varieties of *Lælia purpurata* and *Cattleyas Mossiae* and *Mendeli*. The best of the first named included *C. purpurata Bryseana* with well coloured petals and sepals, and an unusually rich lip. *Odontoglossums* included *O. citrosum*, also beautiful forms of *O. crispum*; and amongst others, *Miltonia vexillaria* Fairy Queen, *Dendrobiums*, the bright *Cochlidia Noezliana* and *Cypripedium*s were particularly conspicuous. The Duke of Northumberland, Sion House, Brentford (gardener, Mr. G. Wythes), contributed an interesting collection, including *Cattleya Skinneri* and *C. Mendeli* in variety. Some fine *Oncidium*s added interest and effect to this group.

As may be expected Messrs. F. Sander & Co., St. Albans, did their share as regards exhibiting Orchids, a splendid collection coming from

this firm. The chief feature of the exhibition was to be found in this group in the shape of a magnificent plant of *Oncidium ampliatum majus*, which bore, it was said, more than 5000 blooms. Some Orchid growers present were of the opinion that this plant was one of the finest specimens in cultivation, and it is no matter for surprise that it was much admired. A novelty was also shown by Messrs. Sander & Co., this being a green *Cypripedium* named *C. callosum Sanderæ*; this was the first time this plant had been exhibited, and numerous visitors gathered around it. The lip is a pale green as is the petals, the latter being tipped white; the dorsal sepal is white veined green. *Cattleya Mossiæ imperialis* and the new *Lælio-Cattleya Frederick Boyle* (*Cattleya Trianae* × *Lælia anceps*) were also admired. *C. Mendeli* Matthew Well's var. was very fine, the same applying to some large profusely flowered plants of *Thunia Marshalliana*. *Odontoglossums* were rich and varied, and some plants of *Cœlogyne Dayana* suspended at the back of the group were effective, the beautiful *Cattleya Mossiæ Reineckiana* bearing many flowers with pure white sepals and petals, and crimped richly coloured lip is especially worthy of notice.

In the second tent the Orchids were arranged on one side of the central table. Commencing at the top a fine plant of *Oncidium crispum*, exhibited by Mrs. Baker, Wimbledon Park (gardener, Mr. A. P. Goodchild) was noticed, as were *Cattleya Mendeli* Mrs. De Barri Crawshay, and *Miltonia vexillaria* Muriel Barnby, shown by De B. Crawshay, Esq., Rosefield, Sevenoaks, Kent. Mons. Vincke Dujardin, Bruges, sent a small collection of *Odontoglossum crispum* in variety, and amongst these were some beautiful forms, the flowers being large and richly spotted. F. Hardy, Esq., Ashton-on-Mersey (gardener, Mr. T. Stafford), exhibited a small group, the principal plant of which was a remarkably well flowered *Cattleya Mossiæ*. An interesting collection of choice kinds was sent by Mr. P. McArthur, The London Nursery, Maida Vale, W. This contribution comprised *Lælia grandis tenebrosa*, *P. purpurata alba*, *L. purpurata Victoria*, *Miltonia vexillaria*, and varieties of *Cypripediums*.

Messrs. Charlesworth, Shuttleworth, & Co., Heaton, Bradford, staged a large and beautiful collection, arranged in an effective manner. Some exceedingly fine plants of *Lælia purpurata* were noticeable in this group, as were fine specimens of *Cymbidium Lowianum*. The *Odontoglossums* were splendid, the same applying to the *Oncidium*s and *Cypripediums*. The richly coloured *Epidendrum vitellinum majus*, arranged with *Odontoglossum crispum* and Ferns, made a grand display. Welbore Ellis, Esq., Hazelbourne, Dorking (gardener, Mr. Masterton), contributed a collection of *Odontoglossums* in variety, also the charming *O. Coradinei*. In addition to the one already mentioned Messrs. B. S. Williams & Sons arranged a second group of Orchids, these being in excellent condition.

Messrs. Hugh Low & Co., Clapton Nursery, London, occupied a large space of tabling with a choice and effectively arranged collection. The plants were, however, rather close, and had they been given more space this group would have been one of the most imposing in the Show. *Cattleyas* of the *Mendeli* and *Mossiæ* types were especially fine, the plants being most profusely flowered. *Odontoglossums* in variety, and *Oncidium*s added interest, and contributed largely to the effectiveness of this group. *Stanhopea americana*, *Batemani Lowi*, and *Cattleya Mossiæ Prince George* were conspicuous amongst others. MM. Linden, Brussels, sent a number of Orchids with new plants, the former including *Lælio-Cattleya Danieli*, and *Odontoglossum Pescatorei* var. *Lindenianæ*, with a beautiful collection of *Lælia purpurata* in great variety. F. Hardy, Esq., Ashton-on-Mersey, sent a splendid plant of *Lælia purpurata Hardyana*, the flowers of which were very richly coloured. M. F. Hye, 8, Compure, Ghent, had a plant of *Odontoglossum Vuylstekianum*, a yellow flowered species, and cut blooms of *Lælia elegans Turneri*. M. A. A. Peeters, St. Gilles, Brussels, staged a plant of *Odontoglossum crispum guttatum* and cut blooms of other Orchids. Some cut flowers also came from H. Shaw, Esq., Stamford House, Ashton-under-Lyne, who likewise exhibited a plant of *Cattleya Mossiæ Shawiana*.

ROSES.

Amongst the exhibitors of Roses, cut and in pots, Messrs. William Paul & Son, Waltham Cross, must be accorded a high, if not the premier position. The plants were carrying fully developed blooms and substantial, healthy looking foliage. It was somewhat difficult to make a selection of the best of these Roses, for all were good, and consequently individual taste will choose the best; however, a few may safely be named which will doubtless meet with general approval. *Clio* was in superb condition, and will eventually come into the front rank of Hybrid Perpetuals. For bedding purposes *Duke of York*, free in blooming and charming in colour, must take a high position. Amongst others were Mrs. John Laing, Danmark, Alfred Colomb, Merveille de Lyon, Spenser, Beauty of Waltham, Comtesse de Nadaillac, François Michelon, Crimson Queen, Alfred Colomb, Madame Victor Verdier, Francisca Kruger, Lady Sheffield, Corinna, Duchess of Albany, Ella Gordon in pots and in a cut state, Anna Ollivier, *Clio*, Gloire Lyonnaise, The Queen, Madame Fanny de Forest, Lady Henry Grosvenor, Spenser, Crimson Queen, Duchess of Albany, *Perle des Jardins*, Duke of Wellington, La France, Madame Victor Verdier, Marie Van Houtte, Queen of Queens, Star of Waltham, Alfred Colomb, Merveille de Lyon, Garden Favourite, Margaret Dickson, Fisher Holmes, Juno, Madame Eugène Verdier, Souvenir de Madame Alfred Vy, Mrs. James Wilson, Medea, Baroness Rothschild, Jules Finger, Jean Ducher, Madame Lambard, L'Idéal, and Madame Hoste.

A dozen pots of Roses were shown by Messrs. G. Jackman & Son, Woking Nursery, Surrey; Jules Margottin, Madame Lacharme, Countess of Serenye, Duchesse de Morny, and Sir Garnet Wolseley. Messrs. Paul

and Sons, Old Nurseries, Cheshunt, had Roses in pots and baskets, occupying one corner of the large tent—one of the most attractive features of the exhibition. The plants were admirably trained in various styles, and carrying a profusion of well formed blooms. All were good, but those attracting most attention were *Innocente Pirola*, *Madame de Watteville*, François Levet, Souvenir de S. A. Prince, Charles Gater, Catherine Mermet, Violet Bouyer, La France, Maréchal Niel, Merveille de Lyon, Captain Haywood, Paul's Single White, Clara Watson, Ulrich Brunner, Magna Charta, Etoile de Lyon, and *Perle d'Or*. Some superb *Cannas* were also shown by this firm, amongst the most prominent being Souvenir de Antoine Crozy, Paul Bruant, Antoine Barton, Comte de Bouchard, Comet, Mrs. Tasker, Baronne M. de Hirsch, Madame Crozy, Pioneer, Charles Moore, Sophie Buckner, Nadir, Stansfield, and Königin Charlotte.

Roses were shown by Mr. C. Turner, Slough. The plants were clean, and carrying numbers of fine flowers. Turner's Crimson Rambler profusely bloomed claimed first attention. Amongst the others were noticed Céline Forestier, La France, Camille Bernardin, Innocente Pirola, Mrs.



FIG. 65.—ODONTOGLOSSUM CRISPUM SANDERÆ. (See p. 408.)

J. Laing, Thérèse Levet, Jeannie Dickson, Pride of Waltham, Madame Victor Verdier, and Star of Waltham, all in excellent condition. The Roses cut, and in pots, staged by Mr. Wm. Rumsey, Joynings Nurseries, Waltham Cross, were remarkably fine. In a cut state, *Niphetos*, Madame Hippolyte Jamain, The Queen, Catherine Mermet, Souvenir d'un Ami, Madame de Watteville, and Céline Forestier were very beautiful. Plants in pots were numerous, and comprised the following varieties in exceptional form—Alphonse Soupert, Madame Victor Verdier, Marquise de Castellane, Magna Charta, Annie Laxton, Camille Bernardin, Madame Gabriel Luizet, Souvenir d'un Ami, Souvenir de la Malmaison, Duchesse de Vallambrosa, Pierre Notting, and Dupuy Jamain.

PLANTS AND FLOWERS.

The group of foliage and flowering plants arranged by Messrs. W. Cutbush & Sons, Highgate Nurseries, N., immediately on the right of the entrance of the large tent, was very beautiful, and contained many handsome plants. Well flowered *Azaleas* assisted in brightening the exhibit, while such plants as *Lilium longiflorum*, *Hydrangeas*, grand *Mignonette*, *Pæonies*, *Mandevallias*, *Crassulas*, *Ericas*, *Boronia*s, Ferns, and Palms, all well arranged, enhanced its effect. Messrs. John Peed and Sons, Roupell Park Nurseries, Norwood, arranged a large and varied collection of *Caladiums*, comprising numbers of the leading varieties.

A somewhat extensive collection of new and rare Ferns was exhibited by Messrs. Jas. Veitch & Sons, Royal Exotic Nursery, Chelsea. One of the best was *Polypodium Schneideri*, a hybrid of great beauty between *P. vulgare* and *P. v. elegantissimum*. Other noticeable kinds were *Asplenium Veitchi*, *Gymnogramma Veitchi*, *Pteris cretica Mayi*, *P. serrulata gracilis*, *P. ludens*, *P. tricolor*, *P. geraniifolia*, *P. longifolia Mariesi*, *P. Reginæ*, *P. R. cristata*, *P. tremula Smithiana*, *Adiantum æmulum*, *A. versailleense*, *A. Weigandei*, *A. cyclosum*, *A. Legrandi*, *A. Collisi*, *A. Lawsonianum*, *Nothochlæna Eckloniana*, *Anemia collina*, *Doodia aspera multifida*, *Davallia parvula*, *Polypodium aureum*, *Davallia elegans polydactyla*, *Osmunda japonica corymbifera*, *Nephrolepis davallioides furcans*, and *Lomaria discolor bipinnatifida*. Some handsome *Caladiums* were also staged by the same firm, such varieties as Madame Imbert Kœchlin, John Laing, La Lorraine, Madame Alfred

Magne, Gaston Chan'lon, Baronne Clara de Hirsch, Martha Laforge, Ibis Rose, Baron Adolphe de Rothschild, Alice Van Geert, Charlemagne, Minus erubescens, Mrs. Harry Veitch, Le Nain Rouge, Mons. Leon Say, Comtesse Ferdinand de Lesseps, Comte de Germiny, George Berger, and Souvenir de Para being very fine. The peculiar marking and shading of the leaves, to which these plants owe their charm and popularity, were perfectly developed, and proved high cultivation.

Messrs. J. Veitch & Son's group of hardy flowering and foliage plants was superb. Very beautiful were *Clethra alnifolia*, *Lilium longiflorum*, *L. giganteum* (grand), *L. longiflorum* Harrisii, *Cytisus trifolius*, *C. scoparius* Andreanus, *C. s. præcox*, *C. purpureus flore-pleno*, *Genista virgata*, *Viburnum opulus*, *Andromeda* (Pieris) *speciosa cassinæ-flora*, *Magnolia parviflora* (superb), *Chionanthus virginicus*, *Cistus formosus*, *Hydrangea paniculata grandiflora*, H. Thomas Hogg, *Indigofera Gerardiana floribunda*, *Lilium Ukeyuri* (Alexandrae), *Philadelphus microphyllus*, *Magnolia Watsoni*, *Olearia Gunni*, *Veronica carnosula*, *Fabiana imbricata*, *Vitis heterophylla variegata*, *Acer palmatum dissectum variegatum*, *A. p. septemlobum elegans purpureum*, *A. japonicum laciniatum*, *A. palmatum dissectum*, *A. p. linearilobum atro-purpureum*, *Bremurus himalaicus*, *Azalea Graf Van Muren* (Double Ghent), *A. rosæflora*, *A. Daviesi*, *Rhododendrons* John Walter, Meteor, Sappho, Kaiser Wilhelm, and Helen Schiffner, *Hydrangea rosea*, and *Spiræa bumalda ruberrima*. The arrangement of this exhibit was splendid, the most having been made of the fine plants at disposal.

A splendid group of *Caladiums* was arranged by Messrs. J. Laing and Sons, Forest Hill, S.E. The varieties included *Madame Fritz*, *Kœchlin*, *bicolor Cannaerti*, *Gaspard Conyer*, *Candidum*, *Jas. H. Laing*, *President de la Devansaye*, *Comte de Germiny*, *Cardinale*, *William Pfitzer*, *Ludemannii*, *Madame Box*, *Prince Albert Edward*, *Madame Mitjana*, *Louis A. Van Houtte*, *Oriflamme*, *James Laing*, *Excellent*, *Chactas*, *Bellone*, *Chelsoni*, *Verdi*, *Barao de Mamore*, *Albo-luteum*, *Boieldieu*, *Pauline Guichard*, *L'Automne*, *Triomphe de Comte*, *Leopold Robert*, *Lymington*, *Ornatum*, *B. S. Williams*, *Triomphe de l'Exposition*, *Rose Laing*, *Louise Duplessis*, *W. Marshall*, *Linne*, *Madame Marjolin Scheffer*, and *Princess of Teck*. The colouration of these *Caladiums* left little or nothing to be desired, and the leafage was superb. Messrs. E. D. Shuttleworth & Co., Ltd., Albert Nurseries, Peckham Rye, S.E., exhibited a group of miscellaneous stove and greenhouse plants. The Palms and Ferns were very fine, and of a rich green, plainly denoting good health. *Crotons* too were good, as also were *Dracænas*, *Caladiums*, *Orchids*, *Liliums*, and *Hydrangeas*.

A number of finely flowered plants of *Clove Carnation Uriah Pike* were shown by Mr. G. May, King's Road, Upper Teddington. This grand variety is now being extensively shown and advertised, and thoroughly deserves the popularity which will doubtless be accorded it. A handsome bank of double and single *Begonias* was arranged by Messrs. J. Laing & Sons, Forest Hill, S.E. Awards of merit were accorded to *Marchioness of Salisbury*, *Lady Theodora Guest*, and *Sunlight*. Unfortunately the axle of the cart in which the plants were being brought to the show broke, and the blooms were consequently somewhat damaged, but by no means sufficiently to mar the exquisite beauty and delicate colouration of the flowers. Amongst the best were *Duchess of York*, *Duke of Fife*, *Mrs. Laing*, *Purity*, and *Duke of York*, doubles, and *Lady Grimthorpe*, *Britannia*, *Grand Duchess of Hesse*, and *Lady Roberts*, singles.

Messrs. Balchin & Son, Hassock's Nursery, Brighton, exhibited the brightly hued *Leschenaultia biloba major*, *Erica ventricosa rosea*, *Hydrangea paniculata*, *H. Otaksa*, *Boronia serrulata*, *Coprosma Baueriana variegata*, and *Calla Little Gem*. Messrs. Laxton Bros., nurserymen, Bedford, exhibited a small collection of hardy flowers, including *Aquilegia cœrulea*, *A. hybrida*, *Pyrethrums* *Madame Patti*, *Mont Blanc*, *Comte de Montbron*, *Captain Nares*, and *Delicata*, *Agrostemma flos-Jovis*, *Geum miniatum*, *Papaver orientale*, and *Lupins* in variety.

Messrs. Wm. Cutbush & Sons sent grand blooms of *Carnations* *Souvenir de la Malmaison* and flowers and plants of *Uriah Pike*. Hardy flowers, too, were largely contributed by Messrs. Cutbush & Sons. In this exhibit *Pyrethrums* were largely shown, as also were *Irises*, *Iberis corifolia*, *Erigeron philadelphus*, *Euphorbia myrsinites*, *Saxifraga hypnoides*, *Trollius napellifolius*, *Potentilla rupestris*, *Papaver orientale*, *Daphne cneorum majus*, *Saponaria ocymoides*, *Papaver nudicaule*, *Erigeron aurantiacum*, *Heuchera sanguinea*, *Hemerocallis fulva*, *Aquilegia vulgaris alba*, *Anchusa Barrelieri*, *Geum miniatum*, *Saxifraga pyramidalis*, *Pæonies*, and *Iris siberica alba*.

A handsome collection of hardy flowers was arranged by Messrs. Barr and Son, King Street, Covent Garden, in which *Irises* formed one of the best features. *Pyrethrums*, too, were shown in great variety. Noticeable amongst other plants were *Hemerocallis fulva*, *Chrysanthemum coronarium*, *Lilium longiflorum* Harrisii, *Lupins* in variety, *Violas*, *Geranium ibericum*, double white *Narcissi*, *Gladioli*, florists' *Tulips*, *Saxifragas*, and *Spiræas*. Messrs. Paul & Son, Old Nurseries, Cheshunt, were accorded an award of merit for *Rhododendron* *Duchess of York*, which is described below. An extensive collection of hardy flowers was also staged by Messrs. Paul & Sons, and included *Rhododendrons* *Sir Isaac Newton*, *Princess*, *Campanulatum*, *Frederick Waterer*, *Beauty of Cheshunt*, *Lady Palmerston*, and *Stella*, *Lilacs*, *Pyrethrums*, *Thorns*, *Polemoniums*, *Irises*, *Geum coccineum*, *Papavers*, *Wiegels*, *Camassia esculenta*, *Viburnum plicatum*, *Honesty*, *Centaureas*, *Delphiniums*, and varieties of *Azalea mollis*.

Messrs. James Veitch & Sons arranged a magnificent collection of hardy flowers, which formed one of the most pleasing features of the

Show. Blooms of *Pæonia rubra plena*, *P. rosea plena* were very fine, as also were the double white *Narcissi*. *Dodecatheon* seedlings were attractive, and double *Pyrethrums* were seen in splendid condition. A collection of German *Irises* comprising all the leading varieties was staged, and blooms of Veitch's hybrid *Aquilegias* were superb. *Papavers* were good, and *Turban Ranunculuses* in pots were very fine. Mr. T. S. Ware, Hale Farm Nurseries, Tottenham, N., staged a well diversified collection of hardy flowers, including *Liliums*, *Spiræas*, *Centaureas*, *Pæonies*, *Saxifragas*, *Heuchera sanguinea*, *Iberis corifolia*, *Lithospermum prostratum*, and many others. Messrs. J. Laing & Sons exhibited a group of foliage and flowering plants, arranged with splendid taste and judgment. Palms, Ferns, *Crotons*, *Dracænas*, *Odontoglossums*, *Dendrobiums*, *Anthuriums*, *Nepenthes*, *Oncidiums*, *Gloxinias*, *Cattleyas*, *Caladiums*, *Ericas*, and *Miltonias* were all well utilised. Messrs. J. Peed & Sons, Roipell Park Nurseries, Norwood, also arranged a good group, in which *Azaleas*, *Caladiums*, Ferns, Palms, *Ericas*, *Dracænas*, *Crotons*, *Gloxinias*, and *Liliums*. Messrs. Backhouse & Son, The Nurseries, York, had a charming collection of hardy flowers, including many charming rock plants. These latter were placed amongst stones to produce as natural effect as possible, and the arrangement was a relief from the others shown.

Trusses of *Zonal Pelargoniums* composed of fine pips were shown by Mr. J. Walker, Thame, and included *Ethel Lewis*, *Mercedes*, *William Bealby*, *Mrs. Patchille*, *Nellie Thomas*, *Sir Percival*, *Clytie*, *Swanley Single White*, and many other fine varieties. A box of garden species of *Roses* was contributed by the Rev. J. H. Pemberton, Havering-atte-Bower, Romford, and contained some interesting forms. Messrs. J. R. Pearson & Sons, Chilwell Nurseries, Notts, sent plants of a new *Gloxinia* named *Beacon*, a rich velvety crimson variety of fine form. Messrs. Wallace & Co., Colchester, sent a collection of early flowering *Calochorti*, in which some good forms were noticeable. *Rhododendrons* were grandly shown by Messrs. Wm. Paul & Son, and included such varieties as *Chas. Dickens*, *Sir C. Napier*, *maculatum nigrum*, *Joseph Whitworth*, *Princess Mary of Cambridge*, *Lord Palmerston* and *Blandyanum*. Mr. F. Perkins, Regent Street, Leamington, showed plants of a good tricolor *Pelargonium*, *Queen of Summer*, and a *Zonal* named *Alexandra*, which is bright scarlet in colour.

Ferns were extensively exhibited by Mr. H. B. May, Dyson's Lane Nursery, Edmonton, this well-known grower bringing a collection of choice kinds. The effective *Pteris Victoriae*, *Asplenium marginatum*, *A. caudatum*, *Adiantum Collisi*, *Pteris tremula Smithi*, *Phlebodium aureum*, and *Anemia tomentosa* were amongst the best of these. First-class certificates and awards of merit were adjudged for several of the Ferns shown by Mr. May, but these are referred to elsewhere. The same exhibitor sent a very fine collection of ornamental foliage plants, including *Dieffenbachia Leopoldi*, Palms, *Aralias*, *Phrynium variegatum*, *Crotons*, and *Begonias*.

Pelargoniums were shown in splendid condition by Mr. H. J. Jones, Ryecroft Nursery, Lewisham, this grower having apparently put forth his best efforts in that direction. The plants were well grown and remarkable for their floriferousness. Amongst other varieties shown were *Princess May*, *May Queen*, *Alice*, *W. C. Boyes*, *Mr. H. J. Jones*, *Eclipse*, *Sir Trevor Lawrence*, and *Prince of Orange*. Mr. C. Turner, Royal Nurseries, Slough, also sent a fine collection of *Pelargoniums*, which included the varieties *Rosy Morn*, *Buffalo Bill*, *Enterprise*, *Mr. Coombs*, *Indian Yellow*, and *Black Diamond*. The flowers were large, brilliant in colour, and borne in large numbers on the well-shaped plants.

Messrs. H. Cannell & Sons, Swanley, Kent, were represented by a magnificent collection of *Tuberous Begonias*, *Fuchsias*, and *Calceolarias*. The *Begonias* comprised some of the best single and double varieties in cultivation, the flowers being rich in colour, stout in substance, and large in size, without showing any coarseness. The named varieties included *Miss Edith Wynne*, *R. B. Parsons*, the charming *Rosebud*, and *Mrs. W. B. Miller*. The *Fuchsias* shown by this firm were named *Princess May*, and the variety was described in these pages a few weeks since. The *Calceolarias* were all that could be desired, so far as concerned size, colour, and form of the blooms.

Mr. T. S. Ware, Hale Farm Nurseries, Tottenham, had a splendid group of *Tuberous Begonias* tastefully arranged with Ferns, Palms, and plants of *Asparagus plumosus*. This contribution was one of the finest groups of *Begonias* ever arranged, the collection occupying a considerable amount of tabling. The plants, too, were well grown and profusely flowered. *Bexley Gem*, *Leviathan*, *Mrs. S. Pope*, *Beauty of Belgrove*, *Rosebud*, *Princess May*, and *Duke of York* were amongst the best of the doubles, while the singles were represented by such charming varieties as *Zanda*, *Alba marginata fimbriata* and *Challenger*.

Messrs. J. Carter & Co., High Holborn, exhibited *Gloxinias* in variety, the flowers being fine and richly coloured, and the same may be said of the *Calceolarias*, *Petunias*, and *Mimuluses* shown by the same firm. The *Petunias* included a fine double variety named *Mrs. James Carter*, and a single rosy pink form designated *Queen of Roses*. The *Mimulus gloriosus* was also worthy of mention. Hardy flowers were also shown by the same firm, whose collection included the *International Prize Pansy*, *Violas*, *Irises* in variety, double and single *Pyrethrums*, *Lavatera arborea variegata*, *Poppies*, and *Lupins*. Mr. C. A. Farren, Dartmouth Lodge, Forest Hill, sent plants of *Tuberous Begonias*, which did him credit as an amateur. Messrs. Hugh Low & Co. sent a number of hardwooded and other plants, comprising such as *Ericas* in variety, *Crassulas*, *Pimelea spectabilis*, and *Fancy Pelargoniums*.

A collection of the useful and charming hybrid *Streptocarpus* came from Messrs. J. Veitch & Sons, Royal Exotic Nursery, Chelsea, also

plants of *S. Dunni* (hybrids) and *S. Dyeri*. Messrs. Veitch & Sons also staged a number of their well known Amaryllises, which were much admired by visitors. The plants were placed in a groundwork of Adiantums, and were most effective. The new *Disa langleyensis* and some hybrids of *Phyllocactus* were likewise exhibited by the Chelsea firm.

Messrs. W. & J. Birkenhead, Sale, Manchester, as usual on these occasions, sent a varied and interesting collection of Ferns. Amongst these were some choice hardy and exotic species and varieties. *Pteris scaberula*, *Adiantum roseum*, *A. monochlamys*, *Gymnogramma peruviana argyrophylla*. The hardy Ferns were particularly beautiful, some of the best being *Athyrium f.-f. regale*, *A. f.-f. todeoides*, *A. f.-f. Stansfieldi*, *Allosorus crispus* and *Athyrium f.-f. Frizellæ coronare*, which is described elsewhere. A case of Filmy Ferns was also exhibited by Messrs. Birkenhead, and an award of merit was adjudged for *Hymenophyllum chilense*.

An extensive collection of hardy flowers came from the nurseries of Mr. B. Ladhams, Shirley, Southampton. This grower had splendid bunches of *Heuchera sanguinea*, double and single Pyrethrums, the yellow *Onosma taurica*, *Campanulas* in variety, *Pæonies*, *Aquilegias*, Poppies, Lupins and *Centaureas*.

Some *Gloxinias* and hybrid *Streptocarpus* were exhibited by Messrs. H. Cannell & Sons in addition to the *Begonias* and other plants already mentioned. The *Gloxinias* were varied in colour, and the *Streptocarpus* were noticeable for their large blooms and floriferousness. Some flowers of *Carnation* Mrs. H. Cannell, a very fine variety, were also shown by the Swanley firm. G. F. Wilson, Esq., Weybridge, sent a basket of *Primula japonica* blooms cut from plants growing in the open air, also flowers of *Calochortus* in variety.

Tuberous *Begonias* in variety were staged by Mr. J. R. Box, Croydon, the flowers being equal in size and colour to those of other growers. The best of those staged were Rev. G. Carniæ Fisher, Rosebud, R. B. Parsons, Miss Falconer, Ladas, and Beauty of Belgrove. It may be interesting to state that space could not be found for all the plants brought by Mr. Box, who was thus compelled to send some of his *Begonias* home again. A brilliantly coloured double variety named Lafayette, suitable for bedding, was exhibited by this grower.

Messrs. Kelway & Son, Langport, Somerset, exhibited extensively in the hardy flower department, showing a beautiful and varied collection of Irises, double and single Pyrethrums, *Pæonies*, *Delphiniums*, *Cannas*, and Lupins comprised the bulk of Messrs. Kelway's exhibits. Amongst the *Cannas* Duke of York and Duchess of York were particularly fine. Pyrethrums King Oscar and Carl Vogel are also deserving of more than a passing glance.

Alpine and other rock plants were exhibited by Messrs. Paul and Sons, Cheshunt, this firm arranging a miniature rockery at the entrance of one of the tents. At the back small Conifers were placed, and the other portion was planted with tufts of Alpine Phloxes, *Arenarias*, *Cheiranthus alpinus*, *Thymus sanguineus*, and other plants.

H. C. Mayhew, Esq., South Norwood Hill (gardener, Mr. E. Simmonds), staged some well grown *Caladiums*, and Mr. G. Jackman, Woking Nursery, had some splendid plants of *Azaleas*. The best of these were Emperor Napoleon, Fama, and some seedlings. Messrs. J. James & Son, Woodside, Farnham Royal, Slough, sent some magnificent *Calceolarias*, and Messrs. Lane & Son, Berkhamsted, staged a group of hardy *Azaleas*. The plants were small but profusely flowered. Messrs. R. Smith & Co., Worcester, followed their usual custom in sending a collection of *Clematises* in pots, the plants being trained on balloon trellises and well flowered. The most conspicuous of these were Sensation, Princess of Wales, Mrs. George Jackman, La France (very rich), Belle of Woking, Venus Victrix, and Duchess of Edinburgh, the last three named being double forms.

New and rare plants were not very plentiful, but some of particular interest came from MM. Linden, Brussels. This firm had *Maranta Massangeana metallica*, *M. Massangeana atrata*, *M. m. florentina*, to which first-class certificates were awarded. Similar honours were given for *Adiantum claesianum*, *Begonia platanæfolia illustris* (Linden), *B. platanæfolia decora*, *Hemitelia Lindenii*, *Alsophila Marshalliana*, *Cyathea Masteriana*, *C. pygmaea* and *Miconia vesicaria*, all of which are described elsewhere. The same firm exhibited plants of *Caladium Adamantinum*, *Begonia platanæfolia pulvinata*, *B. Lansbergiæ*, as well as others of more or less interest.

Messrs. J. Laing & Sons, Forest Hill, S.E., sent a number of new Colours, some choice *Bertolonias*, *Caladiums*, and the now comparatively well known *Strobilanthus Dyeranus*.

Messrs. F. Sander & Co., St. Albans, staged a collection of new and rare plants, amongst these being some splendid *Marantas*, *Heliconias*, *Sonerilas*, and others. A first-class certificate was awarded for *Heliconia illustris rubricaulis*, a similar honour going to *Sonerila H. Walter*, and an award of merit to *Coleus Empress of India*. Descriptions of these plants will be found elsewhere. Amongst the other choice plants staged by this firm were *Dracena Sanderiana*, *Browallia speciosa major*, *Coleus Princess May*, *Maranta Leonæ*, *Hippeastrum stylosum*, *Sonerila W. P. Bound*, *S. Duke of York*, *Maranta Sanderiana*, *M. regalis*, *Leopoldina Laucheana*, *Alocasia Watsonia*, and the free-flowering *Bougainvillea glabra Sanderiana*.

Messrs. J. Cheal & Sons, Crawley, Sussex, sent hardy flowers, comprising double and single Pyrethrums, *Rhododendrons* in variety, and sprays of *Violas* arranged on a velvet covered board. Bouquets and wreaths were exhibited by Messrs. Henry O. Garford; Scrivener & Co.,

Watford; J. R. Chard, Stoke Newington; and J. Prewett, Bayswater. James Currie, Esq., Edinburgh, sent blooms of *Chrysanthemums*. Roots of the Yam came from Mr. W. Gradwick, Hope Gardens, Kingston, Jamaica.

CERTIFICATES AND AWARDS OF MERIT.

Adiantum Claesianum (M. Linden).—The fronds of this Fern are very short, the colour being pale green with white markings (first-class certificate).

Alsophila Marshalliana (M. Linden).—A comparatively dwarf growing Tree Fern with long fronds, the stems of which are very darkly coloured (first-class certificate).

Alströmeria Peregrina alba (J. T. Bennett Pöe).—This is a useful form, with pure white flowers striped and speckled with green (first-class certificate).

Asplenium Drueryi (H. B. May).—An interesting species of medium height. The fronds are dark green, with serrated edges (award of merit).

Asplenium incisum (H. B. May).—The fronds of this distinct species are about 15 inches in length, and very dark green in colour (first-class certificate).

Asplenium Mayi (H. B. May).—This species is quite distinct, the fronds being dark green and finely cut (first-class certificate).

Athyrium f.-f. Frizellæ coronare (W. & J. Birkenhead).—A beautifully crested Fern, the fronds being light green in colour and finely cut (award of merit).

Begonia platanæfolia var. illustris (M. Linden).—A South American variety, with pale green leaves with carmine coloured ribs, and having white blotches (first-class certificate).

Begonia platanæfolia decora (M. Linden).—This appears to be a strong growing variety with large foliage. The leaves are glaucous grey veined very dark green, the under surface red (first-class certificate).

Begonia Lady Theodore Guest (J. Laing & Sons).—An exquisitely coloured double form. The flowers are large, very pale cream suffused with delicate rose (award of merit).

Begonia Marchioness of Salisbury (J. Laing & Sons).—A grand double variety with large pure yellow blooms (award of merit).

Begonia Sunlight (J. Laing & Sons).—A single variety of perfect shape, the colour being white edged with deep rosy scarlet (award of merit).

Caladium Assunguy (J. Peed & Sons).—A distinct variety, the leaves being red veined, white and dark green (award of merit).

Caladium Baronne Clara de Hirsch (J. Veitch & Sons).—A pale cream coloured variety shading to pale green at the margins. The ribs are very clearly defined, and are a dull red in colour (award of merit).

Cattleya Mendeli Lewisi (W. L. Lewis & Co.).—The sepals and petals of this charming form are delicate rose in colour, while the lip is of a rich crimson slightly shaded with purple, and having a yellow and brown striped throat (award of merit).

Cattleya Mendeli Mrs. De Barri Crawshaw (De B. Crawshaw).—This is a grand form of *C. Mendeli*. The flowers are large and attractive. The lip is tipped bright magenta, while the sepals and petals are bluish pink (award of merit).

Cattleya Mossie imperialis (F. Sander & Co.).—This is a magnificent form with large flowers. The sepals and petals are rosy mauve, the lip being of an unusual size and brilliant colour, the front lobe bright velvety magenta (first-class certificate).

Cattleya Mendeli picta (F. Sander & Co.).—This is a beautiful variety. The sepals and petals are white faintly tinted rose, the lip being large and veined bright magenta, a tinge of yellow characterising the throat (award of merit).

Coleus Empress of India (F. Sander & Co.).—A large dark foliaged variety marked with bright crimson (award of merit).

Cyathea Masteriana (M. Linden).—Several plants of this new Tree Fern from South America were exhibited by M. Linden. It appears to be a strong growing species with dark green fronds about a yard in length (first-class certificate).

Cyathea pygmaea (M. Linden).—This is a new Tree Fern from South America. The plant exhibited bore three fronds about 30 inches in length, and of a rich green colour (first-class certificate).

Cypripedium bellatulum, Hardy's variety (F. Hardy).—The flowers of this are richer coloured than those of *C. bellatulum*, the foliage being also darker (first-class certificate).

Cypripedium callosum Sanderæ.—This is a very distinct form. The dorsal sepal is white veined green, as are the petals. The lip is pale green veined with a darker colour (first-class certificate).

Datura chlorantha (J. T. Bennett Pöe).—This is a long flowered form of a clear pale yellow colour. It is a very handsome kind (first-class certificate).

Heliconia illustris rubricaulis (F. Sander & Co.).—A beautiful plant with Canna-like foliage. The leaves are dark green veined and margined red, the stems being of a similar colour (first-class certificate).

Hymenophyllum chilense (W. & J. Birkenhead).—A dwarf growing Filmy Fern, the fronds of the plant shown not being more than 3 inches in height (award of merit).

Lalio-Cattleya Aylingi (F. Sander & Co.).—A beautiful bigeneric hybrid. It was raised by Mr. E. Ayling in 1878, when gardener to A. J. Cummings, Esq., Highgate; but no particulars were given as regards its parentage. The sepals and petals are bright rosy mauve, and lip being magenta-crimson (award of merit).

Lælio-Cattlega Frederic Boyle (F. Sander & Co.).—The sepals and petals of this bigeneric hybrid (*Cattleya Trianae* × *Lælia anceps*) are pure white. The lip is white tinted rose, and margined rosy purple (award of merit).

Magnolia parviflora (J. Veitch & Sons).—This is a charming form with pure white waxy flowers having a dull crimson centre (first-class certificate).

Maranta Massangeana metallica (M. Linden).—This is a fine form with deep green leaves, having clearly defined white ribs. The centre of the leaf near the midrib is paler green, shading to deep chocolate brown (first-class certificate).

Maranta Massangeana Florentina (M. Linden).—A small form of lightish green-coloured leaves, blotched whitish green and brown, and having rose-coloured ribs (first-class certificate).

Maranta Massangeana atrata (M. Linden).—An exceptionally dark foliaged variety, with pale green ribs and broad margins of dark velvety green (first-class certificate).

Miconia vesicaria (M. Linden).—An interesting but not particularly attractive plant from Peru. The leaves are about 4 inches in length, 2 or 3 in width, and of a dark green colour, with a hirsute surface (first-class certificate).

Odontoglossum Andersonianum Young's var. (Chas. Young).—A splendidly spotted form of the well-known type. The flowers, too, are of a large size and good shape (award of merit).

Odontoglossum crispum Excelsior (Baron Schröder).—This is a grand form, with broad sepals and petals, white in colour, but heavily spotted with bright chocolate (first-class certificate).

Odontoglossum crispum Wolstenholmie (Baron Schröder).—A variety somewhat resembling *O. c. Excelsior* in shape and markings, but having a delicate suffusion of rose through the sepals and petals (first-class certificate).

Odontoglossum Rex (Baron Schröder).—A charming variety of the crispum type. Each sepal and petal has a white margin, a clear chocolate blotch in the centre, and is suffused with purplish rose (first-class certificate).

Odontoglossum Andersonianum superbum (Baron Schröder).—The principal feature of this form consists of the deep reddish brown spots on the sepals and petals (first-class certificate).

Odontoglossum crispum zanthos (Baron Schröder).—A chaste variety with white sepals and petals, the lip being also white and the throat yellow (first-class certificate).

Odontoglossum crispum Massangeanum (F. Sander & Co.).—A splendid form with large and richly spotted flowers (award of merit).

Odontoglossum Vuylstekianum (J. Hye).—This is a splendid species with attractive flowers. The sepals and petals are yellow spotted, whitish, the lip being cream coloured and beautifully crimped (first-class certificate).

Odontoglossum crispum capartianum (A. A. Peeters).—A fine form with richly spotted flowers. The sepals and petals are tinted rose (award of merit).

Odontoglossum crispum Trianae (H. Shaw).—A distinct form of the well known type. The petals are tinted pale purple and richly spotted brown (award of merit).

Oncidium Marshallianum superbum (W. C. Walker).—This is a large flowered variety, with a ground colour of yellow heavily spotted in the sepals and petals with chocolate. The lip is pure yellow (award of merit).

Pelargonium Imogene (C. Turner).—A charming variety, with flowers of a blush pink shade blotched dark carmine (award of merit).

Phaius Owenianus (F. Sander & Co.).—This new hybrid is the result of a cross between *P. Oweniae* and *P. Humboldtii*. The sepals and petals are reddish brown, the lip being very richly coloured (first-class certificate).

Phyllocactus Cooperi (J. Veitch & Sons).—A fine white variety, the centre of the flowers being lemon yellow (award of merit).

Phyllocactus Jessica (J. Veitch & Sons).—A beautiful salmon pink flower, large in size and of a delicate shade (award of merit).

Phyllocactus Orion (J. Veitch & Sons).—An intense crimson scarlet coloured variety with purple shading (award of merit).

Polypodium Schneideri (J. Veitch & Sons).—A handsome Fern, the result of a cross between *P. vulgare* and *P. v. elegantissimum*. The fronds are beautifully cut, and of a rich green colour (first-class certificate).

Pteris cretica sempervirens (W. & J. Birkenhead).—A useful form of *P. cretica*. The fronds are dark green, paler at the tips, which are slightly crested (award of merit).

Rhododendron Duchess of York (Paul & Sons).—A charming hybrid, delicate rose in colour, the upper petals being spotted with green (award of merit).

Rhododendron Duke of York (Paul & Sons).—This variety carries large shapely trusses, with blooms of a purplish rose colour (award of merit).

Rose Eugène Verdier (J. T. Bennett-Poë).—A buff coloured Tea variety with somewhat loose, faintly scented blooms (award of merit).

Scolopendrium vulgare scalariforme (J. Veitch & Sons).—A dwarf growing form with dark green fronds, which have crimped edges (award of merit).

Sonerila H. Walter (F. Sander & Co.).—A dwarf growing plant with attractive foliage. The leaves are about 3 inches in length, 2 inches broad, grey white, veined and spotted dark green, the under surface being reddish (award of merit).

Wistaria multijuga (Hon. W. F. D. Smith).—This appears to be a distinct type, the racemes being nearly 3 feet in length. The flowers are rather small and looser than those of *W. sinensis* (award of merit).

VEGETABLES AND FRUIT.

The display in this department was an excellent one, the whole side table in the 150-foot tent being occupied with a great variety of superior produce.

Taking the exhibits in their order of arrangement we first come to a box of Tomatoes from Lord Wantage (Mr. Fyfe, gardener); the variety was named Dwarf Champion, and the fruits were very large, smooth, heavy, and good (cultural commendation).

A similar award was made for dishes and baskets of, not large, but high quality Mushrooms exhibited by Mr. F. Wright, Ash House, Parson's Green, Fulham.

Mr. Miller, gardener to Lord Foley, Escher Lodge, exhibited a collection of fruit and vegetables, including very good Melons, Peaches, and Cherries, with Cucumbers, Mushrooms, Asparagus and Lettuce. A bronze medal was awarded.

Next we arrived at a very extensive exhibition of Cucumbers, Melons, and Tomatoes, the introductions of Messrs. Sutton & Sons, as grown by Mr. S. Mortimer, Rowledge, Farnham. The Cucumbers consisted of splendid specimens of three varieties that were certificated on three consecutive seasons, namely, *All* in 1892, *Success* in 1893, and *Progress* in 1894—all are excellent undoubtedly, but steady advance is marked, the greatest excellence culminating in "*Progress*," which appears to include a combination of good properties. The Melons included fine fruits of Windsor Castle, Hero of Lockinge, Sutton's Perfection and Conqueror. Among the Tomatoes were boxes of first-class fruit of Earliest of All, Sutton's Perfection, and Conqueror, the whole forming a remarkable contribution, for which a silver-gilt Knightian medal was unanimously awarded, and just as well worthy of a silver cup.

Mr. McIndoe, gardener to Sir Joseph Pease, Bart., Hutton Hall, staged a small collection of superior fruit, comprising the first dish exhibited from a private garden of Early Rivers Nectarine, grandly coloured. Lord Napier was also admirably represented, as were Best of All and Scarlet Premier Melons (silver medal).

Mr. G. Wythes sent from Sion House Gardens a large box of good vegetables, mostly grown in the open air, comprising Turnips, Carrots, Cauliflowers, Asparagus, Tomatoes, Peas, Mushrooms, and Kidney Beans; also boxes of Brown Turkey Figs and Peaches, a good dish of Nectarines, with Melons and large Monsteras, meriting the silver-gilt Knightian medal that was awarded.

A silver medal was adjudged to Mr. G. Featherley, The Vineries, Gillingham, Kent, for several excellent and well finished bunches of Black Hamburgh Grapes, two dishes of Dymond Peaches, half a dozen fruits of Covent Garden Favourite Cucumbers, and a basket of very fine Ne Plus Ultra Kidney Beans.

Mr. Farr, gardener to A. Pears, Esq., Isleworth, exhibited Melons and Tomatoes, for which a cultural commendation was granted. The most noteworthy Tomato was a fruiting plant of a small variety, named All the Year Round, evidently very prolific, and somewhat resembling Nesbit's Victoria, but larger. The best Melon was named *Centre of England*, a very juicy, thin-skinned, scarlet flesh, sugary, and refreshing, and for which an award of merit was granted.

Three beautiful bunches of Black Hamburgh Grapes were shown by Mr. Osman, gardener to L. Baker, Esq., Ottershaw Park, such as are not often seen at this period of the year; also very good Melons; and a silver medal was awarded.

Messrs. James Veitch & Sons, Chelsea, received a silver Knightian medal for a collection of Apples, nearly sixty dishes. Some of the firmest were Sandringham, Lane's Prince Albert, Easter Pippin, Winter Colman, Striped Beefing, North End Pippin, Gooseberry, Norfolk Beefing, Boston Russet, and Hornead Pearmain.

A magnificent collection of fifty dishes of Apples from Messrs. G. Bunyard & Co., Maidstone, well won a silver-gilt Knightian medal. In size, colour, freshness and firmness the specimens were remarkable. Among the more noticeable were Belle de Pontoise, Lord Derby, Annie Elizabeth, Gloria Mundi, Wilson's Prolific, Hornead Pearmain, Calville Rouge, Lane's Prince Albert, Calville Malingre, Purple German, Grange's Pearmain, and Winter Peach. There are no Apples in the London market from any part of the world at the present time equal to those we have named in this fine collection.

Messrs. Lane & Son, Berkhamsted, staged a handsome dish of Lane's Prince Albert Apple, also a new variety, *Oakland's Seedling*, for which an award of merit was adjudged, and the trees are to be examined by members of the Committee. The fruits are medium to large, oblate, greenish yellow flushed with red on the sun side, very firm, and with a suspicion of the Ribston and Cox's Orange Pippin flavour. The larger fruits had a general resemblance to the Blenheim, the smaller almost reminding of Cox's Orange Pippin. This is a late dessert Apple of promise that will be looked for again.

APPLIANCES.

These were not numerous—in fact there is little or no room for articles of use in the garden at the Temple shows. Mr. G. W. Riley, Herne Hill, and Messrs. F. Rosher & Co., Upper Ground Street, London, had varied assortments of rustic summerhouses in forms to suit various positions, and at prices to meet various pockets. These ornamental and useful adjuncts of homes are worthy of positions in far more suburban and country gardens than they have yet found a place. Models of

travelling greenhouses, also fruit and vegetable protectors easily moveable on rails were on view. The low forms for advancing early vegetables and Strawberries, also for plants generally, seemed to be the most favoured, but the larger would answer equally well for Tomatoes; and lean-to's for protecting blossom and accelerating the ripening of fruit against walls. Whether the novelties can be made to "go" or not depends very much on the enterprise of the introducers. Samson Heaters came from Sam Deards & Co.; and improved flower tubes from Mr. E. Beckett, Aldenham House Gardens, Elstree.

MEDALS AND CUPS AWARDED.

Gold Medals.—To Messrs. J. Veitch & Sons, for bardy ornamental shrubs, &c.; Messrs. F. Sander & Co., St. Albans, for new and rare plants.

Silver Cups.—Messrs. J. Laing & Sons, Forest Hill, for Begonias; Messrs. R. Smith & Co., Worcester, for specimen Clematis; Messrs. Paul & Son, Cheshunt, for Roses; Mr. J. Cypher, Cheltenham, for Orchids; Messrs. B. S. Williams & Sons, Holford, for Orchids; Messrs. F. Sander & Co., St. Albans, for Orchids; Messrs. H. Low & Co., Clapton, for Orchids; Welbore Ellis, Esq., Dorking, for Orchids; Messrs. Linden, Brussels, for Tree Ferns, &c.; Messrs. Charlesworth, Shuttleworth & Co., Bradford, for Orchids; the Duke of Northumberland, Sion House, Brentford, for Orchids; F. Hardy, Esq., Asbton-on-Mersey, for *Lælia purpurata*, Hardy's variety, and other Orchids; Messrs. Cannell and Sons, for ornamental plants; Messrs. Carter & Co., Holborn, for Gloxinias, Petunias, Calceolarias, &c.; Messrs. Backhouse & Son, York, for hardy herbaceous plants; T. S. Ware, Tottenham, for hardy flowers and Begonias.

Silver-gilt Flora Medals.—To Messrs. W. & J. Birkenhead, Sale, Manchester, for British and exotic Ferns; Messrs. J. Veitch & Sons for exotic Ferns; Mr. H. B. May for exotic Ferns; Messrs. W. Paul and Sons, Waltham Cross, for Roses; Mr. H. O. Garford, Stoke Newington Station, for table decorations; Messrs. Barr & Son, Covent Garden, for herbaceous flowers; Messrs. Lewis & Co., Southgate, for Orchids; Messrs. E. D. Shuttleworth & Co., Peckham Rye, for miscellaneous plants; Messrs. J. Veitch & Sons, Chelsea, for *Streptocarpus* and *Hippeastrums*; Messrs. J. Peed & Sons, Roupell Park, Norwood, for Caladiums; Messrs. J. Laing & Sons for Caladiums, &c.; Messrs. W. Cutbush & Son for ornamental plants; Messrs. J. Veitch & Sons for Caladiums; Chas. Turner, Slough, for Roses.

Silver Flora Medals.—To Messrs. Cannell & Sons, Swanley, for Begonias; Mr. H. J. Jones, Lewisham, for Pelargoniums; Mr. J. Prewett, Swiss Nursery, Hammersmith, for table decorations; Miss Mayhew, Norwood Hill; Messrs. J. Carter, Holborn, for herbaceous flowers; Messrs. Kelway & Sons, Langport; Messrs. W. Paul & Son, Waltham Cross, and Messrs. Paul & Son, Cheshunt, for miscellaneous plants; W. C. Walker, Esq., Winchmore Hill, for Orchids; Mr. P. McArthur, Maida Vale, for Orchids; Messrs. Balchin & Son, Hassocks, Sussex, for a group of *Leschenaultias*, &c.; Mr. H. B. May, Edmonton, for decorative plants; Messrs. H. Low & Co., Enfield, for greenhouse plants; Messrs. Collins & Collins, Willesden, for Orchids.

Silver-gilt Knightian Medals.—To the Duke of Northumberland, Sion House, Brentford, for Peaches, Nectarines, &c.; Mr. S. Mortimer, Rowledge, Farnham, for Melons, Cucumbers, and Tomatoes; Messrs. George Bunyard & Co., Maidstone, for a collection of Apples.

Silver Knightian Medals.—To Messrs. J. Veitch & Sons for a collection of late fruit; Mr. G. Featherby, Gillingham, for Black Hamburg Grapes and Cucumbers.

Silver-gilt Banksian Medals.—To Messrs. Jackman & Sons, for Azaleas; Mr. J. R. Box, Croydon, for Begonias; Messrs. J. James and Son, Farnham Royal, for Calceolarias; Mr. J. Pike, Acton, for Carnation Uriah Pike; Messrs. H. Cannell & Sons, for Gloxinias; Messrs. Paul & Son, Cheshunt, for herbaceous plants; Mr. C. Turner, Slough, for Pelargoniums; Mr. W. Rumsey, Waltham Cross, for Roses; Messrs. J. Peed & Sons, for Caladiums.

Silver Banksian Medals.—To Messrs. Lane & Son, Berkhamstead, for Azaleas; Mr. G. Farini, Forest Hill, for Begonias; Messrs. H. Cannell & Sons, for Calceolarias; Mr. Geo. May, Edmonton, for Carnation Uriah Pike; The Guildford Hardy Plant Nursery, for herbaceous plants; Messrs. G. Jackman & Sons, Woking, for Roses; Mr. J. R. Cbard, Stoke Newington, for table decorations; Messrs. A. Scrivener & Co., Watford, for table decorations; Mr. B. Ladbams, Shirley, Southampton, for cut herbaceous flowers; Messrs. J. Veitch and Sons, Chelsea, Messrs. J. Cheal & Sons, Crawley, Messrs. W. Cutbush and Sons, Highgate, and Mr. M. Pritchard, Cbristchurch, for miscellaneous plants; J. T. Bennett-Poë, Esq., Ashley Place, for *Aströmerias* and *Daturas*; H. C. Mayhew, Esq., Norwood Hill, for Caladiums; Sir J. W. Pease, Bart., Guisborough, for fruit; J. L. Baker, Esq., Chertsey, for Grapes and Melons; Lord Foley, Esher, for fruit and vegetables; and Malcolm S. Cook, Esq., Kingston Hill, for Orchids.

Notwithstanding the rain, which unfortunately fell nearly the whole of the morning, there was quite a crowd of visitors, and should the weather be fine on Thursday and Friday the attendance will be enormous.

A most regrettable circumstance in connection with the Show is the illness of the Secretary, the Rev. W. Wilks, whose absence was keenly felt by all who know him, and all sincerely wish him well again. He has, however, excellent coadjutors, one and all of whom worked indefatigably, and unstinted praise is due to them for their untiring endeavours in the interest of smooth working and success.



EVENTS OF THE WEEK.—As is customary after the Temple Gardens Show, which closes on Friday night, the 25th inst., and is reported elsewhere in this issue, a quiet week ensues. Apart from auction sales the only event of interest to horticulturists advertised to take place is the Summer Show of the Royal Botanic Society. This will be held in the Gardens, Regent's Park, on Wednesday, May 30th.

— **THE WEATHER IN LONDON.**—During the past few days the weather in the metropolis has been exceedingly cold for the time of year. North-easterly winds with showers of rain and hail have been prevalent. On Sunday night a frost occurred, and much damage done to garden and field crops in suburban districts. On Monday in London the maximum reading was 53°, or about 10° below the average for the time of year, and about 13° lower than the temperature recorded at the close of last March. Tuesday was fine and not quite so cold; but Wednesday opened wet. As reported on another page, similar cold weather has been experienced in many parts of the kingdom.

— **WEATHER IN THE NORTH.**—May has as yet given us but little genial weather, and the past week has more resembled March. Heavy showers of sleet and hail have fallen, and the hills have been whitened nearly to their bases. In the northern counties severe snowfalls have taken place. For three nights we have had sharp frosts, Potatoes are blackened, and much injury done to the abundant fruit blossom. Very heavy hail fell on Monday evening followed by rain, and Tuesday morning looked unsettled with cold east wind.—B. D., *S. Perthshire*.

— **TESTIMONIAL TO MR. W. G. HEAD.**—A Committee has been formed to raise a fund for the purpose of presenting Mr. W. G. Head with a testimonial in recognition of his long and honourable services as Superintendent of the Horticultural Exhibitions held at Sydenham by the Crystal Palace Company, and by special floricultural societies. The maximum subscription is fixed at half-a-guinea, in order that many judges and exhibitors and others who know Mr. Head may participate in paying him a well-merited compliment. Mr. Richard Dean, 42, Ranelagh Road, Ealing, is Hon. Treasurer; and Mr. William Earley, "Highclere," Marlborough Road, Merton, S.W., Hon. Secretary.

— **A NEW SEEDLING DAFFODIL.**—We understand that the medal for the best new seedling Daffodil exhibited at the spring meetings of the Royal Horticultural Society has been awarded to the Rev. G. H. Engleheart for his seedling poeticus Horace, the result of a cross between *N. p. ornatus* and *N. p. poetarum*. This is the fourth year in succession that Mr. Engleheart has won this medal.

— **CORNWALL POTATOES IN MANCHESTER.**—The General Steam Navigation Co., of London, now announce their intention to run steamers between Penzance and Manchester during the coming new Potato season. They have already arranged for their steamers "Starling" and "Martin" to keep up a regular weekly service between the two ports, sailings from Penzance being every Saturday from May 26th to June 16th inclusive, delivering goods in Manchester on Mondays. This Steamship Company seems to be keeping well to the fore in sending their boats to Manchester. They have established regular services of steamers to Rotterdam and the west coast of Africa since the canal was opened. The above named boats are already well known to shippers trading between Manchester and Rotterdam, they having been engaged in the trade since the line was commenced.

— **RUBUS DELICIOSUS.**—Were I asked to choose six of the best Rosaceous shrubs this would most certainly be one of the number. In general appearance it has very little resemblance to a Rubus, as it is quite free from prickles, the leaves resemble those of *Ribes sanguineum*, and the bare stems at first sight are similar to those of *Neillia opulifolia*. The flowers are pure white, and are about the size of a Dog Rose, and being produced quite as freely the plant is rendered a most conspicuous object in the landscape. To be seen at its best it should be planted in the grass in an irregular, natural-looking mass, with a background of dark foliage. Plant in a rich soil, and as the plants grow they should be allowed freedom, as the freer the growth the more commanding is the group. A good supply of plants may soon be obtained by layering the ripened growths in the autumn or early spring.—D.

— THE LARCH DISEASE.—We are informed that Mr. James Watt, of Little & Ballantine, nurserymen, Carlisle, has gone on a visit to Berlin, for the purpose of examining the State and other forests in Germany, with a view to inquiring into the Larch disease, which is so injurious in this country.

— BUTE NATIONAL ROSE AND HORTICULTURAL SOCIETY.—Please note for next issue, the present Secretaries of above Society. The Bute Horticultural and Apiarian Society is defunct.—R. SMITH, *Secretary*, per R. F. B. [We print this notification exactly as received, but are not quite certain whether the Society or its Secretaries are defunct.]

— DEATH OF MR. THOMAS LOBB.—The death of this veteran collector occurred at Devoran in Cornwall on April 30th. Mr. Lobb was a native of Cornwall, and entered the service of Mr. Veitch, sen., at Exeter, by whom he was engaged as a collector in 1840, and accordingly proceeded to India. During the twenty years or upwards he travelled for Messrs. Veitch & Sons he visited the Khasia Hills, Assam, and other parts of North-east India, and subsequently Moulmein and parts of Lower Burmah, sending home from those districts many choice plants.

— CUPRESSUS MACROCARPA.—Mr. H. Prosser, The Knoll Gardens, Wimborne, sends us a photograph of a very fine specimen of Cupressus macrocarpa. It is pyramidal in form, well furnished to the base, has been planted thirty years, and is growing in a gravelly subsoil. The height of the specimen is 80 feet, the circumference around the branches 70 feet, and the trunk near the base girths 12 feet. Our readers can compare these dimensions with those of other fine specimens of which they are cognisant.

— NEWCASTLE AND DISTRICT HORTICULTURAL MUTUAL IMPROVEMENT SOCIETY.—At the last monthly meeting of this Society, held recently in the Wood Memorial Hall, Newcastle, Mr. W. E. Brandford read a very able paper on "Grasses and Sedges." In the course of his remarks he mentioned the important part Grasses and Sedges played in the world's economy, the former in being essential to man and the animals he domesticates, and the latter in furnishing material for the manufacture of paper and brushes.

— KERRIA JAPONICA.—Though the double variety of this plant is one of the commonest shrubs in cultivation, the typical form is rarely met with. The habit of the single kind is quite distinct from that of the double, and the flowering season is more prolonged. The flowers are produced with great freedom during April on graceful drooping branches; they are bright yellow in colour, and three-quarters of an inch in diameter. For a bed this will be found a most desirable shrub, its free light growth fitting it admirably for massing. A form of this Kerria having single flowers and white variegated foliage is in cultivation; it is weaker in growth than the other two kinds, and to be grown well requires shelter.—D.

— FLOWERING PLANTS AT BARFORD HILL, WARWICK.—I was particularly interested in the grand display of these when looking through the houses on the 5th inst. I do not remember having previously seen such fine plants of Liliun Harrisii. The glossy stems were of wonderful thickness, and the pure waxy white flowers of corresponding size and substance. Several dozens of plants made an imposing display in themselves. Marguerites and Zonal Pelargoniums were represented by hundreds of well flowered plants of various sizes. Spiræas, too, were in excellent form; astilboides and aruncus, as grown here, are delightful plants for house decoration. Specimens arranged singly in vases have a light elegant appearance which few plants can equal.—BELLIS.

— "THE FRUIT SUPPLY."—Mr. F. J. Fletcher writes:—"The opinion given by 'E. M.' on page 356 of the *Journal of Horticulture* emphasises a very great evil when he says, 'no greater mistake in fruit culture can be made than that of purchasing a number of cheap trees for no other reason than that of being inexpensive.' Yet how often is this done! I have long been of 'E. M.'s' opinion, and as last autumn I was entrusted by a capitalist to take over about 70 acres of land, and establish and conduct upon it a fruit farm, care was exercised in the selection of varieties, for in spite of the vast amount of fruit passing through our markets at unremunerative prices, there is yet a growing demand and good prices for really first class produce. Under this firm conviction we have not hesitated to expend up to now over £2000 in this venture, confident that with energy, care, and skill a great future awaits the fruit growing industry in this country. During November, the ground being prepared in September and October, I planted 20 acres with fruit trees, including 14 acres of Apples, 5 of Plums, and 1 of Pears, with Currants and Gooseberries between the rows."

— STRAWBERRY ROYAL SOVEREIGN.—Mr. E. Molyneux, Swanmore Park, writes:—"For the first time I have this year grown this Strawberry in pots, and am so much impressed with the result that I purpose increasing the stock for next season's supply. Considering all points, I regard Royal Sovereign Strawberry as one of the finest introductions of late years. The fruit is freely produced, and grows to an immense size, while the colour is especially pleasing. There is also a certain crispness about the flavour of the fruit that renders it particularly pleasing to the palate."

— RUBUS SPECTABILIS.—The early flowering period of this North American shrub warrants it a place in our shrubberies. In habit it much resembles the Raspberry, but the flowers are quite distinct from any other Rubus; they are produced singly on long drooping peduncles, and are bright red in colour, but are not borne with such freedom as one could wish. The flowering period extends from the second week in April until the middle of June. It produces suckers freely and makes a compact bush from 5 to 7 feet in height.

— CEANOTHUS RIGIDUS.—To succeed with this shrub it should be given a place on a south wall, as, like most of the other members of the genus, it is a little tender. The flowers are borne thickly along the whole of the previous season's growth, and are bright blue in colour. It commences to expand its blooms early in April, and lasts about three weeks in good condition. A good rich loam is the best soil in which to grow this shrub. To ensure a good supply of flowers the lateral branches should be cut hard back at the end of the flowering season, as as to obtain good strong growths for the ensuing year. Propagation is effected by means of cuttings of half-ripened wood.—A.

— DOUBLE PRIMROSES AND POLYANTHUSES.—I fear my note on these in a former issue was too late to be of service to Mr. Dean for what must have been a most interesting lecture at Beckenham. The three doubles mentioned in my note as being named "Brilliant," "Original," and "Harlequin," are catalogued as distinct from the Crimson Purple, Croussei, and platypetala plena. They are offered by a firm of the highest repute, and I believe they will be found to be different from these sorts. The double Polyanthus are, of course, more curiosities than anything else, with the exception of "Dorncleughi," which is of better habit than some, and has bright gold and crimson flowers. What I have as "Golden Ball" does not seem appropriately named, the flowers being flaked crimson and yellow, but much duller in colour than those of "Dorncleughi." Since writing my former note I have had the pleasure of receiving the old "Tortoiseshell," which is rather like Rex Theodore but lighter in colour. I have been informed that "Sharpe's Double No. 2" is the same as "Rex Theodore." I am much interested in some of the old forms, such as "Galligaskins," "Jack in the Green," and "Jackanapes on Horseback." The latter seems scarce or unknown by name, as inquiries in several likely quarters have proved fruitless.—S. ARNOTT.

— WAKEFIELD PAXTON SOCIETY.—At the meeting of this Society held last week, Dr. Clarke, of the Yorkshire College, Leeds, delivered a long, very able, and most interesting lecture, which was listened to with the closest attention. His subject was "Wild Tulips," and he treated it in a masterly manner, and clearly showed that he had given very considerable attention to the matter, and had also made careful observations both at home and abroad, and also in experimenting upon bulbs by cutting, pricking, and feeding. Dr. Clarke illustrated his remarks by a number of chalk sketches on a blackboard. At the close of the lecture, Mr. Calvert, rope and twine manufacturer of Wrenthorpe, at which place Dr. Clarke recently delivered a series of lectures, asked how many varieties of wild Tulip there are, and the latter said he believed there are about forty-two different species. In reply to another question by Mr. Calvert, as to when wild Tulips bloom, the lecturer said the period varies very much indeed, some blooming as early as February, others in May, and some not until June. Dr. Clark, at the request of Mr. Calvert, gave some details with reference to diseases in florists' Tulips. Dr. Clarke's observation showed that it is not very easy to combat with such diseases. Mr. Swire, head master of the School of Art, asked where wild Tulips may be found growing in England, and Dr. Clarke replied that one variety had been found in the East Riding of Yorkshire, and they also grow extensively in Bedfordshire, Wiltshire, and Devonshire. Mr. George Gill, who has been an extensive grower of florists' Tulips for more than half a century, and has very nearly 400 varieties, made some interesting observations on florists' Tulips, and expressed his pleasure at having had the privilege of listening to Dr. Clarke's able lecture.

— SUGAR CANE IN JAPAN.—The government of Japan and public men interested in its industries are paying much attention to the subject of cane-sugar production. The annual consumption of sugar in Japan amounts to 120,000,000 lbs., only one-half of which is supplied by the native manufacturers, though many places in the islands are well adapted to the successful culture of Sugar Cane, or Sugar Beets.

— RHODODENDRON RHOMBICUM.—This charming deciduous Rhododendron is rarely seen in cultivation, though it has been in existence a considerable number of years. This is a pity, as it is possessed of the highest qualities as a garden shrub. The flowers are $1\frac{1}{2}$ to 2 inches across, pinkish purple in colour, and produced freely on short, wiry growths quite a fortnight in advance of Rhododendron mollis, which is one of the first of the deciduous section to open its blossoms. The plant grows from 3 to 4 feet in height and makes a large spreading bush.—D.

— CHOICE PLANTS AT THE MANCHESTER WHITSUNTIDE SHOW.—Among the miscellaneous plants which attracted considerable attention at the Manchester Whitsuntide Show was a grand circular group of plants in pots of the new Carnation Uriah Pike shown by Mr. James Pike, South Acton, London. It is a superb variety, the colour being most dazzling, the flowers produced in abundance on lengthy stems, having a true clove scent. The award and certificate were richly deserved. Turner's Crimson Rambler Rose was highly praised. With the mention of the exquisitely coloured Cannas arranged by Messrs. Paul & Sons, I may say that there were no three exhibits which attracted so much attention. Messrs. F. Sander & Co.'s pretty dwarf floriferous plants of Bougainvillea glabra Sanderiana also came in for a great share of attention. The attendance during the week was larger than for many years on Whit-Monday, 15,000 persons being present.—R. P. R.

— SPRAYING FRUIT TREES.—Spraying fruit trees has now become such a regular part of a successful fruit grower's operation that continual changes in formulations are being presented. It is found, says "Meehan's Monthly," that solutions of copper sprayed over fruit trees are not only safeguards against the attacks of various insects, but are especially valuable against fungus diseases in Canada. They use the following mixtures:—10 lbs. of sulphate of copper or blue vitriol to 100 gallons of water, and add about the same weight of fresh lime. The lime and copper are dissolved in separate vessels, and mixed only when ready for use. It has to be constantly stirred when about to be used on the plants. In the case of the Apple, the spraying is performed just before bloom, after the growth starts, and once or twice after the bloom, which is for the destruction of the codling moth. For this latter process a small quantity of Paris green or London purple is added to the mixture. In many persons' experience the addition of lime is found to be of no great value, and is not used. It gives a whitish appearance to the foliage which is not altogether agreeable; but there are others who contend that they have much better results when lime is used as above indicated.

— MARKET GROWERS' SPECIALITIES.—When growers of plants for market content themselves with specialities it is wonderful how well they grow them; indeed, we may say that there are no plants grown in the world relative to size of pot that excel those turned out in our suburban market establishments. I looked in upon one of these growers, Mr. G. Pike of Hanworth, Middlesex, the other day. That he grew Heliotropes well I knew, but I did not expect that he grew them so largely. However, I found plants by thousands in various stages, with thousands of cuttings in course of being rooted. The best plants, all of course in the usual 48-pots, were some 15 inches in height, very robust, well foliaged, and carrying several heads of bloom. Very cheap were they at the going market rates, but what ultimate purchasers paid for them it would be interesting to learn. Better plants for the size of the pots could not be turned out. The chief sorts were President Garfield and Florence Nightingale. Then there was a fine collection of the double Tropæolums, Hermine Grasshoff, bright orange scarlet flowers, and the double yellow form of it. Those of the most advanced were blooming freely at about 12 inches in height, dense bushy plants, well furnished and excellently grown. These should make useful window box furnishers. Then there were great numbers of Madame Thibaut, the beautiful double pink Ivy-leaved Pelargonium. This still keeps the most popular for market purposes, because, whether as plants or cut blooms, the colour is one of the most in demand. It is easy to fancy windows or window boxes having a back row of these Ivy-leaved Pelargoniums, a centre row of the Heliotropes, and a front of the double Nasturtiums that could trail and droop, as presenting a very attractive and pleasing effect.—D.

— ARROWROOT CULTURE.—The West Indian island of St. Vincent has become the principal centre of Arrowroot culture. The exports of Arrowroot from the island grew from 15,458 barrels in 1888 to 23,433 barrels in 1892, and proportionately since. This rapid increase of production was induced principally by the enhancement in the price of the prepared product.

— REPOTTING AZALEAS.—Mr. W. G. Bailey writes:—"The flowering season of these plants is nearly over, and any that require potting should be taken in hand at once, while those not needing such attention should have a top-dressing of chemical manure. A difference of opinion exists among growers as to the compost that should be used for these plants, some maintaining that they thrive equally well if potted in loam as if peat is used. This, I think, depends on the quality of loam. I have known Azaleas thrive well in loam, and have seen them relapse into a most wretched condition when potted in loam taken from an old pasture resting on limestone. I always prefer good fibrous peat with a little leaf mould and an abundance of sharp sand. After potting or top-dressing the plants should be placed in a temperature ranging from 60° to 70°. A mistake is often made by placing them when finished flowering in a cold airy house. This oftentimes is the cause of the plants making such stunted growth and failing to set their buds satisfactorily and unable to resist the attacks of thrips. By placing them in heat they make a free growth, and rarely fail to set their buds. Syringe the plants freely two or three times a day with soot water. This not only stimulates growth but keeps insects in check. As the season advances they should be changed into a cooler house, and finally stood out of doors on ashes in a partially shaded place."

A TRIP TO ANTWERP.

THE humours of printers are proverbial to those who know them, and also peculiar. If they see an opportunity for misreading a word and making the writer say exactly what he did not mean, the chance to do so is irresistible. Those writers who are prone to accuse revisers of mutilating their productions by taking out their best points little know how much they owe to editorial watchfulness. If in recounting a Christmas experience a gardener should in his joy say he had a turkey for dinner, those "terrible comps" would be quite as likely as not to print it "donkey," and if by chance the error passed, *their* joy would be great. We must not, however, be hard on them. They mean no harm, but seek momentary relief from monotonous work.

But what has this to do with Antwerp? In the remarks on the luncheon (page 389) given by Baron Osy the printers had the audacity to inform the world that it ended in a "grand fuddle." What a treat the comps must have had in the smart turn they gave to the words of the writer—a "grand finale"—a few bright, sparkling, happy moments of general greetings at the close of the enjoyable repast.

Then, again, how the little menu crept into print is one of the mysteries. It was not sent to the Editor by his reporter, yet found its way by some devious route to the printers, and whatever they get goes forthwith into type. No harm was done or libel committed in this case; but the landlubber, on his return to his beloved Fleet Street, thought it looked very absurd to give prominence to the lesser event while ignoring the greater—the banquet. Consumed with a desire to fairly at least, if he cannot fully, represent the hospitality of horticultural Antwerp on the occasion of the show of which it was the celebration, he gives the larger menu.

BANQUET OFFERT AUX MEMBRES DU JURY A L'OCCASION DES CONCOURS INTERNATIONAUX D'HORTICULTURE, LE 15 MAI, 1894.

MENU.

Potage à l'Ecossoise.	Glace Amandine.
Croustades à la régence.	Corbeilles de fruits.
Traites du Rhin, genevoise.	DESSERTS.
Pommes à l'Anglaise.	Café et Liqueurs.
Train de Durham printanière.	VINS
Poularde reine blanche.	St. Estèphe 1887. Haut Sauterne 1878.
Timbales de petits pois.	St. Julien 1881. Margaux 1878
Quartier de venaison St. Hubert.	Champagne Moët et Chandon.
Homards de Norwège ravigotte.	
Salade de laitues.	

A pleasant gathering of about 150 guests assembled. Speeches excellent, animated and humorous were delivered by the respective speakers, Baron Osy, the Minister of Agriculture, Mons. J. Everaerts, Comte de Kerchove and Mons. de Bosschere. It is the custom, however, to prepare and read the speeches on such ceremonial occasions, and very effectively is it done. There was none of the mumbling monotony about the process that might be imagined, and it would be a great deal better if some of our would-be orators at home would have the courage to act in the same way, as it is certain they would say something better worth hearing than often results from their extempore struggles with their mother tongue.

Social and ceremonial adjuncts are not the usual concomitants of horticultural shows in England, except in some of the provinces. In these the gatherings are regarded as important features of the events. It is believed by their promoters that they serve a useful purpose, and certain it is those societies which cultivate the social amenities in the direction indicated are among the richest and most successful in the kingdom.



ODONTOGLOSSUM CRISPUM SANDERÆ.

AMONGST the many beautiful forms of *O. crispum* now in cultivation the one illustrated on page 401 (fig. 65) is undoubtedly one of the best. When exhibited some time ago by Messrs. F. Sander & Co., St. Albans, a first-class certificate was awarded for this distinct form, of which honour it was worthy. The flower needs no minute description, for its value lies in the remarkably heavy blotching, and it need only be said that the sepals, petals, and lip are nearly covered with brown blotches and spots to indicate the distinctive character of the variety. It is one of the most richly coloured forms of *O. crispum* yet met with, and must be classed as one of the finest varieties of that popular type.

ORCHIDS AT THE MANCHESTER SHOW.

NOTWITHSTANDING the great number of Orchids which are ever being imported into this country, they appear to have as firm a hold upon the public taste, judging from the high prices obtained at the two days' sale at Timperley Lodge a fortnight ago, and the great interest centred in the charming display at the Manchester Whitsuntide Show. The charming *Cypripedium* Winifred Hollington, which was certificated both in London and Manchester, and which was shown by Messrs. Lewis & Co., Southgate, found a purchaser in the person of W. R. Lee, Esq., Audenshaw, Manchester, who paid a very high figure for it. The beautiful *Odontoglossum apiculatum*, certificated at the same time as the above, and which was brought to Manchester, was sold, realising all Messrs. Charlesworth, Shuttleworth, & Co. expected it to do.—R. P. R.

ORCHIDS AT BARFORD HILL, WARWICK.

IN the Orchid houses at Barford Hill, which have only recently been built, good forms in the various sections were in flower, one plant of *Dendrobium Devonianum*, imported a year ago, and growing in a basket about 4 inches square, was carrying four beautiful spikes, averaging twenty-three flowers to a spike. *Cattleya citrina* and *Cymbidium Lowianum* were also in good form. Among a number of imported plants Mr. Jones has been fortunate enough to secure a pure white variety of *Cattleya Trianae*. This will evidently be taken great care of. Plants of *Vanda teres* were bristling with flower spikes. No difficulty is experienced in flowering this variety regularly at Barford Hill, Mr. Jones' practice being to expose the plants to full sunshine and syringe freely. A casual visitor might wonder to what use such a host of flowering plants were put, but the demand for them is ever increasing, and every available plant was required for the decoration of the mansion and ballroom on the occasion of a ball recently given by Mr. and Mrs. Smith-Ryland. To meet the increasing demand a new range of houses is now being completed.—BELLIS.

WARSCIEWICZELLAS.

THE few species which constitute this genus are dwarf growing and very interesting Orchids. They are not grown as much as they deserve, for some of them are probably unique in colouring and all are beautiful. They are rather difficult to keep in health, having no pseudo-bulbs or underground tubers to sustain them during the resting season.

To grow these Orchids successfully a warm moist house is necessary. The temperature required is about the same as for *Cattleyas*, but with a little more moisture in the atmosphere in winter. *Warscewiczellas* must not be often disturbed at the roots, and if grown in pots good lasting material should be used in a rough and open condition. Good results can be obtained with crocks and sphagnum alone, and with these it is well to be content. If much peat is used, even if this is of the best quality obtainable, it eventually becomes sour, and forms a close mass of soil in which the fleshy roots of these Orchids soon decay. Fully two-thirds of the depth of the pots must be filled with drainage.

They may also be established on Tree Fern stems in the way *Zygopetalum rostratum* is sometimes managed. No matter how the plants are grown they require abundance of water at the roots while growing. During their period of inactivity they must not be allowed to get very dry, enough water being at all times afforded to keep the leaves in good condition. *W. discolor* has white sepals and petals, lip funnel shaped, purple, with white margin and disc. *W. marginata* is similar in shape, white, with purple margin to the lip. *W. Wenlandi* is the largest flowered of all, white and purple;

the variety *discolor* has yellowish sepals and petals, lip broad, wavy, and of a beautiful rich violet shade. All the kinds grow about 8 inches high.—H. R. R.

AN AMATEUR ORCHID GROWER'S DREAM.

IT is needless to expatiate on the pleasure derived from receiving and unpacking one of those rotund plant hampers. We of the craft well know the joys, hopes, and fears enclosed in the tight-laced package, bearing the impress of smartness and probably the name of some firm of high repute. Reasoning from what we know it is easier to understand and make due allowance for those feelings at their highest tension when Orchids, Flora's aristocracy, are the plants in question. The amateur Orchid grower depicted (fig. 66) appears to have passed from the pleasures of unpacking to that stage of reaction a period of excitement entails. Having introduced the gentleman and his surroundings, he may now be allowed to speak for himself and explain what may be—perhaps is—a stretch of imagination. Yet oft-times "truth is stranger than fiction." He says: "As a lover of Orchids, while allowing that natural laws must be our initiatory guide in the culture of these beautiful plants, I believe and hope to prove that science and art can develop results hitherto considered as impossible. Nature has in mimicry already given to the family birds, bees, and butterflies. In the triumph of mind over matter I hope ere long to give to the world a *Rhinocerifolia*, an *Alligatiflora*, and other trophies of the hybridist's art. To this end I had received from the tropics a box (see picture) of the choicest and most curious specimens that could be gathered. After unpacking, and duly noting with pleasure the varieties sent to me, weary I sat down to ponder over the question of ways and means to carry out the object in view. Neither expense nor trouble should qualify my labour of love, yet here the possibility of unforeseen difficulties crossed my mind, alas! to be realised, as the sequel will show.

"From the first troubles came upon me, although I took extreme measures to avoid them. My choice brands of Manila cheroots were devoted as burnt offerings to the butterflies from the Philippines when fumigation was necessary, being the nearest I could approach Nature in this direction. Vexed with *Vexillariums*, maddened with *Masdevallias*, I observed with others traits of character never before revealed to mortal eyes, then I completely fell under the spell of their witchery. Soliloquising one day amongst these unruly children of Nature I thus apostrophised them: 'Have I not, mes enfants, studied the whims and fancies of each and all of you?' Prepared as I was for anything it did not surprise me to hear an emphatic chorus of 'No!' piped from the upturned striped and spotted throats. 'Speak up, you *Masdevallian* reptiles, with your *Mephistophelian* legs akimbo,' quoth I, 'and you, ye *Cypripedious* vagabonds, and thou, gentle *Lælia*, with sardonic grin and pouting lip, ill becoming thy beauteous face.'

"Flattering myself that I was getting the whip hand of the rebellious crew, I forthwith addressed a member of the *Aurantiaca* family: 'Tell me, my pretty Ada!—' 'Ada!' shrieked a voice in my ear. 'Ob, you wretch, I knew it. Where is this Ada? Who is she? No better than she ought to be, I'll be bound.' It was the voice of my wife, who further informed me she would go home to her mother, and I should see what I should see. Now, there was nothing I wanted to see unless it was some of that wealth expectant from my mother-in-law, who had on sundry occasions tantalised me by the threat of leaving her money to an asylum for Orchidiots. The result of this connubial contretemps was that my wife carried off a substantial cheque with which I had intended to secure a coveted major in the Orchid army, and she appeared on the following Sunday in the family pew resplendent in glittering raiment and gorgeous headgear. But—'Come! Come, dear, are you going to sleep there all night?' 'What! only a dream?' 'Yes,' said my wife, 'dreaming about those Orchids, I suppose.' All's well that ends well, thought I, with a sigh of relief.

"Still, I fear there is trouble yet in store, for my hopeful son and heir had taken a snap shot of me in my dream with a new thought-reading camera, invented by a friend who turns his inventive faculties to other account than Orchids, and he tells me that he has swopped the picture for two live rabbits and a guinea pig with the office boy attached to one of those horticultural journals in Fleet Street."

THE NUTRITION OF ROOTS.

MR. RAILLEM (page 388) has opened up for discussion a very interesting subject, which is of course more physiological than cultural, yet is one that concerns practice in gardening emphatically. When I read that roots can absorb moisture in the soil only in the form of vapour I cannot but remember that cut flowers placed in water do absorb water in its pure state, for in no other

way can moisture be rendered capable of sustaining cut flowers or foliage in a condition of freshness for a long period. The case may not of course apply to roots. But then, how is the case with regard to plants in pots? Here we find the stronger and more absorbent roots always at the bottom of the pots, where moisture is usually most plentiful. It is here certainly not a case of vapour rising from below, as that is in pot-plant roots quite out of the question, for they thrive only when moisture is in absolute contact. The fact that some weeds have been found to exist in dry gravel during hot weather simply shows that there is in the gravel all the same some moisture not visible to our senses, but enough to keep the plants alive, though not thriving. It is an understood axiom that stone or rock always contains moisture, which serves to fertilise soil, and keep plants in existence. We see that fact

on the plants are almost instantaneous? Naturally the inference is that they have in liquid form been absorbed by the roots. Now, if we adopt the vapour theory of feeding roots by ascending moisture in the soil we should have to admit that our practice of top-dressing soil for the purpose of keeping roots near the surface where they can be directly fed by moisture and manure would be no longer tenable. Practically it is most successful, and where practised is a long way more useful than are scientific arguments. Why are the young roots termed spongioles but that their sponge-like formation indicates capacity to absorb liquids?

Let anyone take a plant in a pot having an open or porous base, stand it over a tank from which vapour is, because of the temperature of the water in it, constantly rising; but give the plant no water from the surface; and then see which after all



FIG. 66.—AN AMATEUR ORCHID GROWER'S DREAM.

illustrated in old stone or even brick walls, which will, although apparently baked dry, yet sustain certain descriptions of vegetable life.

Possibly the theory put forth originated from the undoubted fact that parasitical and epiphytal plants do chiefly exist through their roots, on vapour or aerial moisture. These, however, constitute very diverse genera from plants that must of necessity root in the soil, and still more so from aquatic and semi-aquatic plants whose roots exist almost only in water. If in this latter case water is actually absorbed by the roots, although when so absorbed changed into sap, why may we not suppose that water is equally, though, of course, in a lesser degree, absorbed by the roots of plants that grow in the soil? It is urged that water when applied to soil, and manure in it, changes the solid material of the latter into something that is volatile and absorbent, practically into vapour, and in that way roots are fed; but if the contact of water with manures changes their solids into liquids, in fact renders them soluble, may not that alone suffice for the fertilisation of roots without suggesting the vaporous theory?

When we place solid manures in water and thus practically liquify them or convert them into a liquid form, and apply them to plants in that way from the surface, do we not find that their effects

thrives best—that one, or one entirely similar standing in perhaps a dry arid house, on a dry stage, and in an ordinary close pit, yet is regularly watered from above. The experiment may leave something to be desired, but at least it would afford the best means we have of testing the truth or otherwise of the said botanist's vapour theory.—A. D.

I FIND that in my letter of last week (page 388) I was wrong in my facts or statements. I now gather, with apologies, that (1) the root hairs of plants are supposed to have the power by mechanical decomposition of getting at that vaporous form of liquid which alone they can assimilate; and (2) that moisture while rising through the soil is not necessarily, at all events, in that vaporous form more than any other liquid. But this does not invalidate what I wanted to prove—that moisture does continually rise through the soil, and can carry upwards with its manurial elements.—W. R. RAILLEM.

IF Mr. W. R. Raillem desires to know whether plants will take up water in a liquid form let him cut a few growths from one of his Rose bushes, lay them in the sun for a little while till the leaves

become wilted, then let him plunge them in a vessel of water, leaving the ends of the stems outside the glass if he likes, and if the withering has not been too excessive the leaves and shoots will soon be as fresh as ever. Is not this freshening the result of the imbibition of water, not as vapour, but in liquid form? and if the leaves take up water in its visible state why cannot the roots of plants do likewise? Do not Hyacinths in glasses of water take up a portion of the liquid? The subject introduced is interesting and worthy of discussion, as it points to the advantage of burying manure deeply, a practice which some persons condemn.—A GARDENER.

In reference to the very interesting remarks on the above subject by Mr. Raillem, page 388, last issue, I may mention that several years ago when potting a number of *Lobelia speciosa* for decorating the edges of paths and stages in a conservatory, I put a small quantity of quarter-inch bones over the crocks in the 3-inch pots the plants were put in. This was only done to about two dozen plants, and was the only difference to the others, which had the same soil, and grown on the same shelf. When coming into flower there was a very marked difference between those treated to the bones and the others. The former were much stronger with large dark leaves, but not so floriferous. I turned them out of their pots expecting to find the roots clinging and devouring the small bones at the bottom, but was surprised to find that not a single root was found touching the bones in any case. The manurial properties of the bones in this case must have risen in the form of vapour, and appropriated by the roots.—D. B., *Forth Vineyard*.

SEASONABLE HINTS ON FLORISTS' FLOWERS.

AURICULAS.

AURICULA growers, whether they are those who grow for exhibition or for home decoration, have had a good time of it this year, for I hardly recollect a season in which one has had more enjoyment of them than in that which has now ended.

The season, at any rate in the south of England, has been altogether favourable. The latter half of April, when our collections were in the fulness of their beauty, was dull and cold, and consequently the flowers remained for a long time in perfection, and even now one has some good trusses of flowers which are not quite opened. For the same reasons the plants have done well; there have been but few losses, and they are now forming good stout foundations for their future well-being. Some of the newer kinds, too, such as Mr. Simonite's Rev. F. D. Horner, the late Mr. Woodhead's Black Bess, Mrs. Dodwell, and George Rudd, and those fine selfs Mrs. Potts and Heroine, have vigorous constitutions and form robust plants. I find, however, that George Lightbody becomes more difficult to grow. Whether its constitution is becoming more feeble or not I do not know, as I see very fine plants of it on the exhibition table, and so I can only conclude I do not know how to manage it. Prince of Greens always has been a delicate grower and slow of increase. There are other new green edges, but it will be some time before they come into general cultivation.

Where seed is not wanted it will now be well to go over the collection and remove the flower stems, so as to enable the whole vigour of the plant to be given to maturing its crown for another year. The plants also should be carefully gone through, all decaying foliage removed, and if there be any appearance of green fly, the pits, or houses, or frames where they are grown ought to be fumigated previous to their removal. This ought to be done at once, and a sheltered position facing north secured for them. When the frames are placed where they are to remain for the summer the plants should be removed to them.

With regard to repotting there have been various suggestions made as to the best time for performing the operation; but I have come to the conclusion after more than fifty years' experience that it matters very little, and therefore any time from this forward according to convenience will answer. I believe, too, that the more simple the compost used the better will the Auriculas thrive. The abominable mixtures which the older florists used to recommend have been long since discarded, and I do not suppose there is now one Auricula grower who uses any of them. If a good strong turfy loam is employed in about three parts to one of well decayed cow manure and a little road grit, powdered charcoal or coarse sand to keep it open, nothing more is required. In repotting, of course, care will be taken that the pots are thoroughly clean, about one-third of the pot filled with broken potsherds with some of the coarser pieces of the loam, and then partly filled with the compost. Before planting each plant must be well examined, and the carrot or tap root, which in some varieties is apt to be very long, should be shortened; and as very often it becomes more or less

decayed, every piece of dark or unhealthy root ought to be cut away, and the wound dusted with powdered charcoal. It is essential that the plants be firmly potted, the soil pressed down, and the collar of the plant kept just above the surface.

I have said nothing regarding the woolly aphis, about which Auricula growers had so great a scare some few years ago. Destruction seemed impending over our collections, and the most gloomy forebodings of Auricula growing were placed before us. One looks back with some amusement on those days, as we have come to the conclusion that this once-dreaded pest does little or no damage. Still, if in repotting a colony of them is found around the collar of the plant they should be brushed away; but nothing else need be done, and I am quite sure that more plants were destroyed by the remedies that were applied to them than would have happened if they had been left alone. I generally keep one frame for the freshly potted plants, into which they are removed after they have had a good watering with a fine rose. This frame is shaded and kept close for a few days; after that air is freely given. Water will, of course, be supplied from time to time, according to the character of the weather. The use of glazed pots, which is now so common among Auricula growers, saves a good deal of trouble in this respect, as they do not so readily absorb the water given.

CARNATIONS AND PICOTEEES.

As before said, I have for some time given up the cultivation of these in pots, and have had more to do with the border varieties than I formerly did. These, after being wintered in small pots, were planted out last month, and have made good progress. The bountiful rains have been very favourable to their growth. I have already staked mine, and as the flower stems grow this must be done, or otherwise damage will ensue. With the exception of weeding, tying up the flower stems, there is little to be done for the next month or so.

GLADIOLI.

These are all, or ought to be, well above ground, and I have never seen them come up better or more regularly; the beds will require to be weeded, and when the plants are about a foot high liquid manure may be applied. It is of no use applying this when the spikes are formed, but should rather be used for the purpose of adding vigour to the root before this process takes place. Here, too, nothing more will be required until later on, when perhaps stakes will have to be placed to them.

PANSIES.

I only grow some of the fancy varieties in pots, and turn them out into the border after they have done blooming. The prolonged drought of last year was very destructive to mine, and the difficulty we have in the south of growing them was greatly intensified. I do not expect a repetition of last year, but I have questioned whether it might not be better when they have done flowering to cut them down and plunge them, pot and all, in a border and take cuttings as they develop themselves. I have hitherto been contented with the somewhat lazy method of pulling the plants to pieces in September and then repotting them, but I am inclined to think that better results would be obtained by depending more on cuttings.

RANUNCULUSES.

It has been a glorious time for this moisture-loving root, and my two beds look most promising, and as if I should be rewarded for the care taken of them by an abundant bloom. I am much surprised that they are not more grown, and even in Scotland, where Lightbody, Kilgour, and others used to grow them so successfully, and where so many good seedlings were raised, I believe they have gone nearly, if not quite, out of cultivation. This is a pity, for a more beautiful sight than a bed of these elegantly shaped flowers with all their brilliant hues of colouring can hardly be imagined.

ROSES.

This will now be a busy, and to some Rose growers an anxious time. The plants have made during the past few weeks vigorous growth, but have not advanced much as far as I can judge towards flowering. There is the greatest possible contrast in this respect between them now and this time last year. Thus there was comparatively little growth in the wood, but a rush towards blooming; this was, I think, easily accounted for. In May we were in the middle of the drought, rain had not fallen for two months, we had had abundance of brilliant sunshine, and as there was no moisture at the roots to encourage growth, the plants were driven to put forth their energies into the flowering buds. This year we have had such copious supplies of rain that I imagine the temperature of the ground must be much lower than it was in the middle of last

May, and then came a bitterly cold wave with nipping frost, upsetting all previous calculations on the earliness or otherwise of the flowering season.

It will be desirable to keep a good look out still for the Rose maggot, but for the present I think aphides are likely to give us but little trouble, for they do not like the heavy rains which we have lately experienced. As the month advances disbudding will have to be attended to, and it is much better to do this before the buds attain any size. The process is a simple one, and a child may be initiated into it, and will get through the work speedily. As the shoots increase in length the stronger ones must be fastened to neat stakes, and the tying out of these shoots will be an advantage to the plant as admitting more light and air. Liquid manure may now be given advantageously once or twice a week, and the hoe should be frequently used when the weather is at all dry. The hot summer of last year has supplied us with a plentiful crop of weeds, which will thus be kept under, while the stirring of the soil is very useful to the plants.

TULIPS.

Although I have some of the best of the florists' Tulips, and my bed of them has been gay enough, I do not profess to be a Tulip grower, and consequently am no mentor on this subject. My flowers were small this year owing to last summer, but in this I am inclined to think from what I saw in the Drill Hall on the 8th inst. is the case with others also. Like other spring flowers they are early this year, and will probably be fit for lifting before the end of the month, when they should be carefully stored away in a dry place free from frost.—D., Deal.

LINARIAS.

It is not to be wondered at that there seems a revival of interest in the Linarias or Toadflaxes. Some of the species are very handsome with their tall spikes of Antirrhinum-like flowers, while others are extremely neat and pretty, creeping or trailing along the ground or on old walls. Presenting thus considerable variety of habit there will be found among their number plants suited to the requirements of almost any garden containing hardy flowers. As is generally known the Toadflaxes belong to the natural order of Scrophularineæ, an order which includes a large number of rather attractive plants. The name Linaria is said to be derived from *Linon*, Flax, on account of the resemblance of the leaves to those of the Flax. There are said to be about 150 species or supposed species in the genus. Many of these are, however, of little or no value for garden purposes. The main object of this article is to draw attention to some of the perennial species which are of especial merit, and also to allude briefly to a few of the biennial or annual varieties worthy of a place.

What appears to be a charming and desirable little plant is one which is figured in Maund's "Botanic Garden," 1878 edition, vol. v., plate clxxx. This is *L. alba*, which I should like to meet with, although I fear it may not be a true hardy perennial. It is said to be a native of Europe, of perennial habit, and to grow 9 inches in height. From the illustration the flowers appear to be white with a yellow palate. It is doubtful if this species is still in cultivation in this country, and I cannot find it quoted in any continental catalogue of alpine or herbaceous plants. *L. alpina* has delightful little blue flowers with golden yellow palates, and the plant only grows about 6 inches in height. It is generally described as a herbaceous perennial, a character which may be applicable to it in some gardens, but is certainly not appropriate in many others. In most gardens it succeeds only if treated as a hardy annual, sowing itself freely in some places. It is rather tantalising to the writer who admires this little gem to have to confess that it will not perpetuate itself in this way in his garden. This is all the more a disappointment since many far less beautiful plants sow themselves so freely as to become very troublesome. This alpine Toadflax is a useful plant for the rock garden. *L. anticaria*, another charming, if less effective plant for the rockery or front of the border is a particular favourite of mine. It is also spoken of as a hardy perennial, and for the first two or three years in which I grew it I should have considered it to be this. More severe winters have, however, succeeded, and I am now disposed to rely upon self-sown plants which come very freely here.

The generally accepted description of *L. anticaria* is "white tinged lilac, delicately veined." This, however, fails to give an idea of the pleasing varieties which may be produced. The first year I grew this Toadflax I took a note of eight varieties. Some of these were not very distinct, but all had noticeable differences. Some were white with the lines hardly observable, others had these very distinctly marked, and some flowers were lilac purple with deeper lines. This year the first flowers opened on the last days of April. *L. cymbalaria*, known as the "Mother of Thousands," or

as an Exeter writer in a Scottish contemporary calls it, "Mother o' Millions," is very well known. It is understood to be a native plant, and its creeping, climbing, or trailing habit renders it suitable for many positions where its lobed and rather kidney-shaped leaves and pretty lilac flowers will be much appreciated. A variety with variegated leaves and one with white flowers may occasionally be met with. It is quite at home on walls, and it is interesting to see how its seed vessels seem to turn into a crevice suitable for depositing the seeds if such is at hand. *L. dalmatica* is one of the tall growing species again coming into favour. It is said to have been introduced in 1731, but according to Maund was believed to have been lost until 1832, when seeds which had been collected in Persia were presented by Sir H. Willock to the London Horticultural Society. It is rather a fine perennial with yellow flowers, and growing from 3 to 4 feet in height. *L. genistæfolia* is not so bright in colour and does not generally grow so tall as *L. dalmatica*. It is, however, a desirable border plant. It is a native of Europe and Asia Minor, and was introduced so far back as 1704.

L. hepaticæfolia is a very pretty little plant of creeping habit—creeping, indeed, in some soils too rapidly. It is figured in Wooster's "Alpine Plants," second series, plate 3, but the colouring is defective and the drawing does not show the habit of this little species very successfully. It grows from 1 to 2 inches in height, and has pretty little five-lobed leaves of the form known to botanists as cordate reniform, and small, neat lilac purple flowers with white palates. It is very suitable for carpeting the surface of the ground occupied by taller plants. *L. macedonica*, which now seems to be obtainable from nurserymen, is a Toadflax which will soon find its way into the best collections. I first saw it in the Edinburgh Botanic Garden several years ago, and considered it the best of the tall Linarias. The long spike of yellow and orange flowers was very handsome, and the broad leaves made the whole plant more than usually distinct. I sought for this Toadflax in vain, but in 1892 obtained a packet of seed from the Continent which, much to my disappointment, produced a worthless little Linaria with narrow foliage and ineffective purple flowers. I do not know its name, but judging from the difficulty experienced in getting quit of it, I shall be only too pleased if I never see it again. The true *L. macedonica* should grow from 2 to 3 feet high. *L. purpurea*, introduced from South Europe in 1648, but now naturalised in England, seems to be held in comparatively little estimation. It is not to be judged by its appearance on old walls, and if well grown is by no means to be despised in the flower border. It comes into bloom comparatively early in the summer, and flowers into late autumn. Its spikes of purple flowers are a welcome change from the prevailing form of the composites which are so abundant in the autumn. It is also a good bee plant. *L. purpurea* seems a somewhat variable plant, and a form I procured from a friend in Dumbartonshire as *L. lupinoides* is much brighter than most of those ordinarily met with. One merit it has is that it does not send out underground runners so freely as some of the species.

In looking through the hardy flowers in the Liverpool Botanic Garden in 1892 I saw a Toadflax of rather trailing habit and of pleasing appearance, with white and purple flowers. It was labelled "*Linaria repens*. H. K. England." I find this is in the "London Catalogue of British Plants," and, although a native, might be introduced into good sized collections. *L. triornithophora*, from Spain and Portugal, and introduced in 1710, is a pretty species, but unless in very favoured localities in the south cannot be considered hardy. The flowers are three or four in a whorl, and are purple with bright yellow palate. The experience of all I have heard from on the subject of this Toadflax corresponds with my own, and thus I cannot recommend it. *L. vulgaris*, the common Toadflax, is an exceedingly pretty species, and worthy of all admiration. It is most at home in a rather dry position, and is very pretty rambling among the stones of an embankment on the coast of the Solway near my home. The curious variety known as *L. vulgaris* Peloria, which has five spurs instead of one, is a very desirable flower. The flowers of the species and its variety are pale yellow with a deep yellow palate. The great objection to *L. vulgaris* and the pelorial variety is the way in which they will ramble all over the garden unless confined to a spot. A very neat Linaria which has been omitted from its proper position in alphabetical order is *L. pallida*, with pale purple flowers and rather kidney-shaped leaves. It is of creeping habit and requires to be kept within bounds. *L. pallida* grows here to about 3 inches in height. One of apparently tall growth was shown by a nurseryman at the South of Scotland Horticultural Society's Show at Dumfries last year. It was named *L. aurea*, and had good yellow flowers with deeper coloured palates. I am doubtful if this Linaria was properly named, but I hope to see it in growth this year, and may then be able to judge of its merits.

Another very desirable species is *L. saxatilis*, which is of trailing habit and too seldom seen. It is difficult to obtain, and I

have had no practical experience of its requirements. The flowers are yellow with a yellow-brown marked palate. A pretty but not showy species, sometimes sold as a perennial but really of only biennial or perennial habit, is *L. oranifolia*, with rather violet coloured flowers with yellow palate. Under the name of *L. maritima* I received what appears to be the thick-leaved variety of *L. oranifolia* (*crassifolia*), said by some to be a distinct species, and called *L. crassifolia*. From a garden point of view the only difference seems to be its more robust growth. *L. reticulata* and its variety *purpurea* are very beautiful annuals with purple flowers beautifully netted and with yellow or orange palates. *L. maritima*, another annual species from South Europe, has pale yellow flowers with an orange coloured palate. I have experienced no special difficulty in the cultivation of any of the *Linarias*, which seem to thrive best, however, in a light soil. Most of them are readily increased by division, and seeds of several species are obtainable.—S. ARNOTT.



CHRYSANTHEMUMS IN JAPAN.

To the English grower of Chrysanthemums there is always a peculiar fascination in reading about his favourite flower in its native home, and as the Whitsuntide holidays have afforded me an opportunity of turning over some of my Japanese books and pictures, a few notes which have not perhaps been recorded in the *Journal of Horticulture* before may prove interesting to others.

My first treasure of this description was kindly sent me by Mr. S. Yoskida, a courteous Japanese gentleman who occupies the post of Secretary to the Japanese Horticultural Society. It is entitled "Kikiva Meiji-sen," or a catalogue of select Chrysanthemums, and was published three years ago. It is a thoroughly oriental book, with an old gold figured silk binding, printed partly in English and partly in Japanese. It is what may be described as of the concertina pattern, opening in an endless mysterious way that at first causes some bewilderment to anyone used to books of the Western style. Like all oriental books it begins at the end, and ends at what we consider the beginning. There are twenty-five coloured pictures of seedlings raised by a famous Japanese grower, Mr. Seibi Mizumoto, and by the editor, Mr. K. Imai. They are all of the long-petalled Japanese kind, many of the forms being tubulated or semi-tubulated, and as is usual with such works of art the foliage of each variety is shown with great exactitude, for the Japanese grower holds that foliage is an important feature in the cultivation of his much-loved plant. In this work the colouring is very vivid and natural. Most of the flowers depicted are deep rose, crimson, and bronze, white, blush, pure yellow, purple, and quaint minglings of all.

The nomenclature is curious and fanciful. Thus we have *Koko-nemuri*, a yellow variety with red spots, the name comparing it to an old tiger sleeping in a mountain valley; *Oritaki-shiba*, meaning a fire kindled on a mountain; *Gekka-no-hana*, a pale pink variety said to resemble the Cherry blossoms seen by moonlight; *Goko-no-yuki*, a white twisted bloom likened to snow floating on clear water; *Furiwake-gami*, the name indicating the fine hair of a charming maiden, and others of a similar style.

Another work published by the same author but entirely in English, tells us that the Chrysanthemum has existed for thousands of generations, and illustrations are given to show two popular forms of arranging the flowers. The first of these, called "Shinozukur," consists of arranging twenty-three bamboo supports in five rows, to each of which a branch is tied, the supports being highest at the back and becoming gradually shorter towards the front. The second form consists of a plant having fifteen blooms in three rows, one below another, but projecting sufficiently to allow each row of blooms to stand clear of those behind.

The Transactions of the Japanese Horticultural Society contain much concerning the Chrysanthemum, but they are printed entirely in the native character, the index only being in English. Some of the parts have chromo-lithographs, the most attractive of which is a pale pink Anemone-flowered variety, which is interesting because that type is rarely delineated by the Japanese artist, and is probably less esteemed and certainly but little grown compared with the Japanese proper. In another part, the typical wild Chrysanthemum *sinense* is shown. It is a small single-flowered species, with white ray florets and a yellow centre. The articles referred to in the indices are suggestive of interesting matter, and it is a matter of regret that the Transactions are not bilingual. The titles of some are "Native Chrysanthemums," "The History of the Chrysanthemum," "Origin of the Cultivated Chrysanthemum," "Beautiful Specimens of Chrysanthemums," and the "Correction on the Names of Chrysanthemums."

Some nursery catalogues from Yokohama also furnish a pleasant half hour's perusal. A pale lemon coloured Jap with florets an eighth of an inch wide and 7 in length is truly a ragged, ugly looking bloom, and quite

unlike anything I know of; but all the illustrations in these catalogues bear native unpronounceable names. There are several lumpy massive incurved Japs depicted that call for no special remark, but one named *Omandara* is a fine Comte de Germiny type of bloom, with a pale pink reverse, and a bright crimson lake colour inside the petal. Then a deep orange bronze incurved hairy Jap is well shown, but the extreme regularity of its florets suggests very careful dressing before being handed over to the artist.

A sheet of new seedlings from the same source, a chromo-lithograph represents among other varieties two incurved flowers of a decided green colour. One is called Green Emerald, and is a fine globular shaped flower with grooved petals of medium width rather loosely arranged, but still preserving the incurved form. The colour is a clear pale emerald green. The other new green variety is named Yellowish Emerald. It is rather a closer flower than the preceding, but the tips of the florets which are somewhat broader are just tinged with yellow. The other flowers represented are white, yellow, pink, and crimson, and mainly of the incurving type of Japanese, which seems to be growing in popularity, not only here but in America and Japan.—C. HARMAN PAYNE.

(To be continued.)

JUDGING CHRYSANTHEMUMS.

At the meeting of the National Chrysanthemum Society at which Mr. C. E. Shea's paper was discussed, there was an intimation by one member that some consideration should be given to the judging of groups. Mr. Molyneux expressed his willingness to deal with that subject if thought desirable, but as Mr. Shea's suggestions only applied to cut blooms, and as time would scarcely allow the speakers to extend the discussion beyond the judging of cut flowers, it was not possible for the meeting to deal with other matters.

It may at some future time be desirable to lay down authoritative principles to guide judges in making their awards in the plant classes, and as a hint I take an early opportunity of pointing out that at the Chrysanthemum Show of the Massachusetts Horticultural Society the following scale of points is to be observed.

Size and form of plant	...	...	...	...	25 points.
Size of bloom	...	...	...	...	20 "
General effect	...	...	...	...	30 "
Foliage	...	...	...	...	25 "

By way of further explanation it may be stated that the class to which this scale applies is one for a display of twelve named plants, any or all classes, distinct varieties, and that there are four prizes, the first being £12, the second £10, the third £8, and the fourth £6.

Our ordinary show groups, of course, differ materially from the American class, but it seems possible that the Massachusetts scale might be used as a basis to form a scale for judging English group classes, and perhaps someone more interested in the subject than I may deem it worthy of consideration and elaboration. It is not stated how cut blooms in the States are adjudicated upon. In some other plant classes, including one for a group of plants arranged for effect, limited to 150 square feet, the scale adopted is—

Size and form of plant	...	...	...	...	40 points.
Size of bloom	...	...	...	...	30 "
Foliage	...	...	...	...	30 "

The classification in the cut bloom classes is the standard laid down by the American Chrysanthemum Society, the types being as under:—

INCURVED.—Mabel Ward.

JAPANESE.—Wm. H. Lincoln, Mrs. Fottler, and Lilian B. Bird.

JAPANESE INCURVED.—Mrs. Chas. Wheeler, T. C. Price, Kioto.

REFLEXED.—Cullingfordi, President Hyde, Vivian Morel.

ANEMONE.—Lady Margaret, Timbale d'Argent.—P.

PORT ELIZABETH CHRYSANTHEMUM SOCIETY.

THE above mentioned Society, which is affiliated with the National Chrysanthemum Society, held its second annual Exhibition in the Town Hall, Port Elizabeth, South Africa, on Thursday and Friday, the 26th and 27th April. The Show was a very good one, and reflected great credit on the Executive Committee for the satisfactory manner in which its various details were carried out. The exhibits, by their general good quality, showed that the cultivation of the favourite autumn flower has taken firm hold of the people of that part of South Africa. The competition in many of the classes was very keen. The Judges were Messrs. E. Bunn and John P. Creegoe of Port Elizabeth, and Mr. Lockie of the Botanical Gardens, Grahamstown.

In the class for groups in a space of 48 feet the first prize was taken by Mr. Brett with an excellent group of well grown dwarf plants, with large well developed flowers. Mr. Woodward was a good second with a well arranged collection of dwarf plants, but with the flowers not so fully developed as the first prize group. These two exhibitors secured most of the prizes in the open classes, both for plants and cut blooms. The flowers of most of the specimen plants were good, but the training might be much improved. There were many sterling varieties shown, including such as Vivian Morel, Lord Brooke, Duke of York, Mdle. Marie Hoste, Colonel W. B. Smith, Excelsior, G. W. Childs, Baron Hirsch, besides most of the best of the older varieties. There were several plants of Mr. H. Cannell, which variety seems to do remarkably well, the blooms being invariably large, solid, and of a very fresh colour. Some plants of *Etoile de Lyon* were shown, but all had pure white

flowers. This is also the case with a number of plants of the same variety in the collection at St. George's Park.

In the cut bloom classes there were some good flowers shown in both incurved and Japanese, the weak point being in the reflexed. Mr. Brett took first for twenty-four blooms, consisting of twelve Japanese, six incurved, and six reflexed. This stand also obtained the National Society's certificate for the best incurved bloom in the Show, which was a fine deep flower of Guernsey Nugget; also the certificate for the best Japanese bloom—viz., a very fine solid specimen of Mr. H. Cannell.

In most of the amateur classes there was strong competition, the prizes being most divided between Mr. Houghton, Mr. Stroud, and Mr. Kemsley. The two certificates in the amateur classes were won by Mr. Houghton, his best incurved bloom being Miss M. A. Haggis and the best Japanese Vivian Morel. In the ladies' classes for bouquets and similar exhibits all were well staged.

GLASS HOUSES ON WHEELS.

THE accompanying illustration (fig. 67) represents a glass house on wheels, a system which has been patented by the Horticultural Travelling Structure Company. To many horticulturists it will appear as a reversed method of that advocated by the late Mr. Fountaine, and tried among other places at the gardens of the Royal Horticultural Society, Chiswick, some years ago. In that case the plants were grown on a trolley on wheels, and moved in and out of the structure as was necessary, but in the present instance the house is on wheels and may be pushed over the various crops.

The inventors claim that the travelling structures possess many advantages over the ordinary erections, and in a circular before us point out their utility for field and garden crops. They are made in various sizes, and may be used for Vines, Tomatoes, Chrysanthemums, Roses, Strawberries, and fruit trees generally, provided the crops are planted in regular order between the rails on which the house runs. Some of the structures are heated, such as that shown in the engraving, the hot-water pipes being suspended from the woodwork. Lean-to houses for placing over fruit trees on walls are also made, and these will probably prove the more useful. For field and garden crops of Strawberries span-roof frames are built on the same principle. At a recent view of these buildings no definite information regarding the cost of the erections could be ascertained, but a director of the company informed a *Journal* representative that it "would be well within that of the ordinary glass houses."

GRAPE GROS MAROC.

RELATIVE to the remarks of Mr. W. Iggulden, at page 378, I shall note very carefully what northern Grape growers have to say respecting the article in question. Some grand examples of Cooper's Black were staged at the September shows at Edinburgh, but I failed to see the difference between them and Alicante. Certainly I could never see the least trace of Gros Maroc in those shown as Cooper's Black. While admitting the value of working this variety on other stocks, this is not a necessity, good quality market fruit being produced on its own roots.

It would be interesting to know if the famed cropping Vines of the true variety of Gros Maroc at Sawbridgeworth are on their own roots or not. Seeing these particular Vines in full bearing is always enjoyable, the bunches, if not large, being good in berries and well finished. According to my experience Gros Maroc does vary as regards shape of berry when grown on its own roots. I have a round and an oval variety, but in both cases the foliage is precisely the same. Then the original grafts or eyes sent out by the late Mr. T. Rivers were the same; but it was supposed the stock caused the variation. The ovate berry is the true shape. Yet, as before remarked, I have several Vines with round berries, but in propagating I should give preference to the first-named shape. The variety is somewhat difficult to establish, taking one

year more than Gros Colman for fruiting purposes; but when it is at home it is indeed an early autumn good selling Grape.

Compared with any other Grape up to the final swelling, Gros Maroc is most disappointing, the size of bunches being small. When ripe, however, the smallest pieces, which at one time looked more like tendrils, will turn the scale at 1 lb. At thinning time it would be hard to say where the 2 lbs. bunches are coming from. Yet we do have them when ripe. As regards the weight per Vine, it will never equal Gros Colman—at least, for two years in succession. Still the other advantages will always command a place for this easy growing Grape.—STEPHEN CASTLE, F.R.H.S.

IN the very interesting article by Mr. Iggulden on Gros Maroc Grape (page 379) of last week's *Journal of Horticulture*, he there mentions that this variety is so difficult to establish on its own roots, that very few cases of it is to be found in the country. We have both Gros Maroc and Cooper's Black here, and find no difficulty in establishing them on their own roots; in fact Gros Maroc planted in a long house with Gros Colman is far ahead of the latter in vigour, which is also growing strongly. We have always found this variety as free a grower as any we have, and on its own roots. I may have a note about the difference between the two kinds later on.—D. B., *Forth Vineyard, Kippen*.



FIG. 67.—A TRAVELLING GLASS STRUCTURE.

ROYAL HORTICULTURAL SOCIETY.

SCIENTIFIC COMMITTEE.—Present: R. McLachlan, Esq., F.R.S. (in the chair); and Messrs. G. F. Wilson, F.R.S., D. Morris, C.M.G., Drs. Hugo Müller, F.R.S., Dukinfield H. Scott, and J. Reynolds Green.

"*Alternating Generations*."—Mr. McLachlan brought before the Committee a book bearing the above title, lately issued by the Clarendon Press. It is the English translation of a work on Oak galls and gall-flies by Hermann Adler, translated by Charles R. Straton, F.R.C.S., Ed. It has two large plates of illustrations.

Injuries to Leaves of Rhododendron and Gaultheria.—Dr. Hugo Müller exhibited leaves of *R. ponticum* and *Gaultheria Shallon* with the edges completely riddled, some being destroyed as far as the midrib. The plants from which the leaves were taken were injured regularly every spring. Mr. McLachlan suggested that the injury was caused by weevils (probably a species of *Sitones*). The better way to deal with them would be to watch at night, and shake the insects over a sheet of white paper or calico, and destroy them at regular intervals.

Iris iberica.—Mr. G. F. Wilson brought plants showing considerable range of variations in seedlings of *Iris iberica*. One was a singularly large and finely marked specimen. The other was much lighter in colour, and with the spots not so distinct.

Rhododendrons from Sikkim.—Mr. G. F. Wilson exhibited flowers of a hybrid Sikkim *Rhododendron* with large rose-coloured flowers. The petals were very broad and flat, measuring 2½ inches to 3 inches across. Probably allied to *R. Nandeo*.

Crinum capense.—A specimen of this plant, forwarded by Mr. F. W. Moore of the Botanic Garden, Glasnevin, was interesting, as it had been successfully flowered in the open air near Dublin. The flowers were numerous, not so large as the type, but fully coloured.

Aquilegia Stuarti.—This striking plant, with deep blue sepals and white petals, was shown by the President, Sir Trevor Lawrence. It is an improved form of *A. glandulosa*, refined in colour, very large and attractive.

Coryanthes Wolffi.—This singular species first flowered in Europe by Mr. F. W. Moore, Keeper of the Botanic Garden, Glasnevin, was referred to the Committee on account of the specialised character of the flowers, which are orange-coloured spotted with reddish chocolate. The hood is concave and almost solid. In every other species it is helmet-shaped and hollow beneath. The horns at the base of the column are very large. The plant is a native of Ecuador, and grows on Cacao trees in the littoral districts of the Guayas. It flowers when these level lands are mostly inundated. The flower spikes are stiff and upright, and not pendulous as in other species.

[Notwithstanding that the above meeting was held on the 8th inst., the report did not reach us until the 17th, several hours after our last issue had been printed.]

SEVERE FROST—DAMAGE TO CROPS.

THE frosts of the nights of the 19th and 20th of May were more destructive than any I recollect so late in the season. As a gardener I measure frosts more by their effects than by the minimum register of the thermometer. Few flowers which were out have escaped uninjured; the plants of *Polygonum cuspidatum*, which were 6 or 7 feet high, are for the most part killed to the ground. I have grown the plant for twenty-five years, and such a destruction has never happened to it before.—C. WOLLEY-DOD, *Edge Hall, Cheshire*.

THE frost of last night (May 20th–21st), coming so soon after two really hot days, has done a great deal of damage in East Anglia. I do not know the amount of frost, as my thermometer was in an unfavourable position. Potatoes and Dahlias are cut to the ground, Tomatoes and Runner Beans killed, the blossoms of Noble and other tender Strawberries completely done for, but Vicomtesse Hericart de Thury looks uninjured at present. Even this year's growth of the common Ivy is completely cut back and blackened. I have no doubt Roses are severely injured; many shoots are blackened and drooping already. I think this is the most destructive frost that I have ever experienced in my garden.—W. R. RAILLEM.

LAST night, the 20th inst., 12° of frost were registered on the grass, and 6° 3 feet from it in the gardens here. Great damage has been done to early Potatoes and French Beans, and I fear the Strawberries, which are in flower, will be seriously affected by such severe weather, as many of the flowers look black already. Chrysanthemums have not been injured in the least.—H. DUNKIN, *Warwick*.

AFTER such a fine spring we are suffering severely here now with very cold north-east wind, very little sunshine, and cold snowstorms. This morning, May 21st, we had 11° of frost. Potatoes are all cut down, early Strawberry blossoms killed, and I fear Apple blossom and other things are much injured. It is very many years since there was such a show of Apple and Pear blossom.—W. A. JENKINS, *Aldin Grange, Durham*.

IN the south the weather has been severe during the past few days. One of the meteorological instruments in Hyde Park, occupying a rather exposed position, on the night of the 20th, registered freezing point, the mercury having fallen to 32°. Snow fell in Ashford and district this morning, on the 21st inst., and very cold weather prevails, with intermittent showers of rain and hail. The frost caused serious damage throughout the Thames Valley in gardens, and the early Potato crops have been seriously affected. Potatoes and Runner Beans have been seriously damaged by frost in the suburbs of London.

A HUNGERFORD correspondent says that a bitter north-east wind which has prevailed over the district for three days past culminated about five o'clock on the 20th in a snowstorm. During the night there was also a severe frost, which has done great damage to Potatoes, many of which would have been ready to dig in another week. The heavy hailstorms in Yorkshire have done enormous damage to the fruit trees; 5½° of frost were registered during the night of the 20th–21st inst.

THE weather in Forfarshire still continues to be of a very wintry nature, with strong north-easterly gales accompanied with showers of snow and hail. On the morning of the 20th and 21st 7° of frost were registered, with the result that the early crops of Potatoes have been frozen to the ground.—T. M. C., *Corona, Broughty Ferry, N.B.*

THE long-continued spell of untoward weather since April came in has at last culminated in frosts and snow. On the 19th several slight snow showers occurred, and on the morning of the 20th the thermometer stood at 23°, and on the 21st it registered 25°. On the evening of the 20th, after frequent snow showers throughout the day, a heavy one began at six o'clock P.M., continuing for half an hour, covering the ground with snow as completely as it had been midwinter, the temperature at the time being 35°.

Everything of a tender nature is cut to the ground. Potatoes are completely blackened, and all bedding plants outdoors and in cold frames are destroyed. I never experienced so much damage with the same

temperature, but it must be remembered it was of long continuance, and the ground sodden. It is too premature to speak of the fruit, but there is no question Currants and Gooseberries are injured, the former much so, while Strawberry plants look as if it was December.

I have before alluded to the similarity of 1843 to 1893, and I remember well the year of 1844, and so far as the present one has gone it has been very much like it. The summer was cold and wet, serious thunderstorms occurring in June and July; September was hot. The Potato disease was very pronounced in some places, and in 1845 it was general.—W. T., *Lanarkshire*.

[Several other notes obligingly sent arrived just too late for insertion.]



THE NATIONAL ROSE SOCIETY.—DATES FOR METROPOLITAN SHOWS.

THIS is a question of such interest to all exhibiting rosarians that I hardly need apologise for troubling you with some further remarks on it. The recent letter published by you signed "Practice" may confuse some of your readers, as he appears somehow to think the date this year falls on the second Saturday in July; but it falls on the 7th, which is the latest possible date for a first Saturday.

The discussion which was carried on through the winter and spring of 1892–1893 on this question partly arose through an attempt made by Mr. Pemberton (who, growing on late ground, and showing from maidens is a supporter of late dates) to induce the N.R.S. executive, and through them the members, to carry out a new arrangement for the future Crystal Palace Shows. It was proposed by Mr. Pemberton, and seconded by Mr. Lindsell (who I may say is not now quite of the same opinion) at the annual meeting in 1892, "That in future the date of our metropolitan shows should be fixed in all years for the nearest Saturday to the 6th of July." This would make the earliest date possible the 3rd of July, and make it also possible to have as late a date as the 9th July. The proposal, I am glad to say, was rejected by a large majority of the members present, although it was supported by Mr. E. Mawley, one of the Secretaries, who gave the meeting a number of statistics, which as statistics seemed all right, and who spoke in favour of late dates for exhibitions. It was also supported by Mr. J. Bateman, who prophesied a terrible season of an arctic character for 1893. How well these gentlemen's figures and prophecies were verified by the weather and results of 1893 is now a matter of history, as the season was a torrid and not an arctic one.

The question of dates for this meeting is one which can be discussed from various points.

1. What has been the result in the success of Rose growers from various districts at the metropolitan Exhibitions for the last seven years? This is a sufficiently long period to look back on, as we do not require to consult the weather records of the early part of the century to arrive at what is a fair conclusion and average result in regard to Rose growing. Moreover, new systems of culture have partly triumphed over climatic difficulties.

2. Should the fixture of the Metropolitan Show be at a date that will suit the majority of the N.R.S. exhibiting members who reside within a radius of fifty miles from London, or should it be at a chance date which may suit no one, or suit either the south or the north alone, according to the season, bearing in mind the next following question?

3. Was not the Northern Show originally arranged so that those members of the N.R.S. who resided north of the Trent should thereby have some compensation for their supposed infrequent exhibits at metropolitan shows, and have not these northern meetings proved by results that the northern growers win the bulk of prizes at these meetings?

I fear that the data from which we could arrive at an absolutely accurate idea as to the districts from which the Roses shown at the seven most recent metropolitan meetings come cannot now be obtained, but for two years I have tabulated this information, and published it in the columns of one of your contemporaries. Luckily I had done so in 1892, as one of the speakers at the meeting in December of that year, with more zeal than discretion, stated with other inaccuracies, that about two counties were usually represented at the Palace, meaning thereby, I presume, Essex and Surrey. As a fact in 1892 sixteen counties exhibited, and won prizes for over 7100 flowers; and in 1893 there were winning exhibits from twenty counties, Ireland being included for 4700 flowers. Essex in both years stood first through the exhibiting power of the three great Colchester trade firms and the very successful amateur Mr. O. G. Orpen.

In his letter "Practice" (page 360) showed that the northern professionals, Messrs. Harkness, have by their prowess had the lion's share of the trophies in the last seven years; and whether you take their success as that of one firm against all others, or whether you take them as representative growers fighting for the north, they have achieved more in the seven years under discussion than any grower north or south of the Trent. So that as far as the traders are concerned the metropolitan and northern meetings have not been against the interests of the northern professionals.

With amateurs success has been more diversified, Mr. Lindsell of late being able to defeat all comers early in the year, and the amateurs' trophies going to various competitors at the northern Shows; but here I only speak of the big amateurs who grow from 3000 to 18,000 Roses, and with all the respect due to their exhibiting powers and the feeling of personal regard I have for many of them, I may say that I do not consider the metropolitan Show so important a question for these greater growers as I do for the smaller amateurs—namely, those growing under 2000 Rose plants. I say this in view of the fact that you can count the numbers of these giants on the fingers of your hands, whereas the smaller growers are counted by hundreds. The giant enters the arena knowing exactly whom he will in all likelihood meet at certain dates and seasons; the smaller rosarian competes in a good season against at least a dozen or more in every class, many of his opponents being dark horses; but to my mind this uncertainty gives the zest and excitement to exhibiting. It pulls on you when you know that year after year A must meet B, C, and D, and has no dark X, Y, or Z in the background. Whether the growers of Roses on heavy land, in the cold eastern districts, or in the districts north of the Trent, believe it or not, it is absolutely correct to say that the Rose season of the south is of a most ephemeral character, and that in consequence of our infirmity in that respect our Roses are soon over if the season be an early or a hot one, such as the years 1887, 1889, 1893, and possibly 1894. This year may, however, be saved by its humidity, a possibility I had the good fortune to predict in March. With the knowledge of our short season we, whose best flowers are so fleeting, are far more anxious than the stayers on late land that proper dates be fixed for our meetings. It should be of little consequence to an amateur who boasts he can show from June right up to and into August, whether the dates be a week earlier or later, but to smaller rosarians or growers in early districts, if the season be adverse by its earliness or abnormal heat, as in 1893, the date of our Crystal Palace Show is of the first importance, as small growers show at only one or two places, and prefer if it be possible to show at the Crystal Palace meeting. That the opinion of the majority of our members is in favour of an early date was clearly shown by a vote which I took of over 100 members last August, the result being thus given:—Those in favour of a date alternating between the last week in June and the first week in July, 82 per cent.; those in favour of a date between the 4th and 14th July, 18 per cent.

It strikes me that now the Drill Hall Show has been given up as a failure, and a small southern Show (which apparently is to be held in future in the west and midlands of England, and not in the south) temporarily established in its place, those who are working for late dates at the Crystal Palace are trying to prove that we in the south, having a southern Show, are not entitled to have the metropolitan Show at an early date. If this be the idea, and I am now rather inclined to think that this so-called southern Show was originally suggested in order to advance this argument, then I am certainly in favour of having only two Shows for the Society—viz., a metropolitan Show, for the rosarians whose best flower season is usually from mid-June to the first week in July, who live in the southern, western, and metropolitan counties, to be held about the 1st July; and a northern Show, as hitherto, to be held at a date to be decided by northern members; also that the money prizes be more evenly divided than hitherto, so that the north can have no fair cause for complaint. I certainly am not inclined to rest patiently under the present system, if it means a series of dismal meetings at the Crystal Palace, such as that in 1893; and I also think our metropolitan members will be gravely and reasonably dissatisfied if the Executive does not find some remedy for a difficulty which is a constant source of annoyance and dissatisfaction.—CHARLES J. GRAHAME.

P.S.—Since writing the above article a frost of severity has visited us during the night of the 20th or the morning of the 21st inst. I regret to say that the plants of many of my rosarian friends residing within a radius of twenty miles of the metropolis have suffered terribly, and as this will cripple their exhibiting power I fear that 1894 will prove only one more year of disappointment to such of us as were looking forward to a really good Rose year.—C. J. G.

REVIEW OF BOOK.

The Natural History of Plants. By PROFESSOR F. W. OLIVER. London: Blackie & Son.

WE have received from Messrs. Blackie & Son the first of a series of sixteen monthly parts of a work bearing the above title. The present edition is an English translation made by Professor F. W. Oliver from the original German of Anton Kerner Von Marilaun, Professor of Botany in the University of Vienna. How much the work owes to the English translator and the two ladies who assist him those who have not perused the original can form no opinion, but the first number exhibits a perspicacity of treatment and a simplicity of expression which we are wont to consider as rather uncharacteristic of the German intellect in its deeper workings. Indeed, considering the comparatively unpopular nature of the subject, the treatment is as popular as it is conceivable for it to be, and the paucity of technical terms a feature very highly to be commended.

Whenever technical names or terms serve as a *lingua franca* between scientific men of different lands the prodigal use of them is intelligible and justified, but in vernacular publications issued with the professed object of enlightening the uninformed their incessant use seems rather

to frustrate than promote the intentions of the writers. It is difficult to understand why some scientific authors should labour, apparently so studiously, to thrust unnecessary obstacles in the way of their readers, unless it be for the purpose of weeding out all but the most robust intellects, and illustrating their idea of the doctrine of survival. Love of science even in its lighter aspects cannot be regarded as the evidence of a frivolous mind, and therefore demands from the teacher a condescension to the greatest simplicity consistent with exactness. With knowledge, as in the case of wealth, the object should be to secure a wide and equable diffusion, and not to seek to create monsters and prodigies living in an empyrean of their own and having no social or intellectual contact with their fellows. As a specimen of the attractive style in which this work is written we extract from it the opening paragraphs:—

"Some years ago I rambled over the mountain district of North Italy in the lovely month of May. In a small sequestered valley, the slopes of which were densely clad with mighty Oaks and tall shrubs, I found the Flora developed in all its beauty. There in full bloom, was the Laburnum and Manna Ash, besides Broom and Sweet Briar, and countless smaller shrubs and Grasses. From every bush came the song of the nightingale; and the whole glorious perfection of a southern spring morning filled me with delight. Speaking, as we rested, to my guide, an Italian peasant, I expressed the pleasure I experienced in this wealth of Laburnum blossoms and chorus of nightingales. Imagine the rude shock to my feelings on his replying briefly that the reason why the Laburnum was so luxuriant was that its foliage was poisonous, and goats did not eat it; and that though no doubt there were plenty of nightingales, there were scarcely any hares left. For him, and I dare say for thousands of others, this valley clothed with flowers was nothing more than a pasture ground, and nightingales were merely things to be shot.

"This little occurrence, however, seems to me characteristic of the way in which the great majority of people look upon the world of plants and animals. To their minds animals are game, trees are timber and firewood, herbs are vegetables (in the limited sense), or perhaps medicine or provender for domestic animals, whilst flowers are pretty for decoration. Turn in what direction I would, in every country where I have travelled for botanical purposes, the questions asked by the inhabitants were always the same. Everywhere I had to explain whether the plants I sought and gathered were poisonous or not; whether they were efficacious as cures for this or that illness; and by what signs the medicinal or otherwise useful plants were to be recognised and distinguished from the rest. And the attitude of the great mass of country folk in times past was the same as at the present day. All along anxiety for a livelihood, the need of the individual to satisfy his own hunger, the interests of the family, the provision of food for domestic animals, have been the factors that have first led men to classify plants into the nutritious and the poisonous, into those that are pleasant to the taste and those that are unpleasant, and have induced them to make attempts at cultivation, and to observe the various phenomena of plant life.

"No less powerful as an incentive to the study of herbs, roots, and seeds, and to the minute comparison of similar forms and the determination of their differences, was the hope and belief that the higher powers had endowed particular plants with healing properties. In ancient Greece there was a special guild, the 'Rhizotomoi,' whose members collected and prepared such roots and herbs as were considered to be curative, and either sold them themselves or caused them to be sold by apothecaries. Through the labours of these Rhizotomoi, added to those of Greek, Roman, and Arabic physicians, and of gardeners, Vine growers, and farmers, a mass of information concerning the plant world was acquired, which for a long period stood as botanical science.

"As late as the sixteenth century plants were looked upon from a purely utilitarian point of view, not only by the masses but also by very many professed scholars; and in most of the books of that time we find the medicinal properties, and the general utility of the plants selected for description and discrimination, occupying a conspicuous position and treated in an exhaustive manner. Just as men lived in the firm belief that human destinies depended upon the stars, so they clung to the notion that everything upon the earth was created for the sake of mankind; and, in particular, that in every plant there were forces lying dormant, which, if liberated, would conduce either to the welfare or to the injury of man. Points which might serve as bases for the discovery of these secrets of Nature were eagerly sought for.

"People imagined they discerned magic in many plants, and even believed that they were able to trace in the resemblance of certain leaves, flowers, and fruits to parts of the human body, an indication, emanating from supernatural powers, of the manner in which the organ in question was intended to affect the human constitution. The similarity in shape between a particular foliage-leaf and the liver did duty for a sign that the leaf was capable of successful application in cases of hepatic disease, and the fact of a blossom being heart-shaped must mean that it would cure cardiac complaints. Thus arose the so-called doctrine of Signatures, which, brought to its highest development by the Swiss alchemist Bombastus Paracelsus (1493-1541), played a great part in the sixteenth and seventeenth centuries, and still survives at the present day in the mania for nostrums.

"The inclination of the masses is now, as it was centuries ago, in favour of supernatural and mysterious rather than simple and natural interpretations; and a Bombastus Paracelsus would still find no lack of credulous followers. In truth, the great bulk of mankind regard botany

as subservient to medicine and agriculture, they look at it from the purely utilitarian point of view in a manner not essentially different from that of two hundred—or even two thousand—years ago, and it may well be a long time before they rise above this idea.

"In addition to the botanical knowledge thus initiated by the necessities of life, a second avenue leading to the same goal was early established by man's sense of beauty. The first effect of this was limited to the employment of wild flowers and foliage for purposes of ornament and decoration. Later on it led to the cultivation of the more showy plants in gardens, and ultimately to the arts of gardening and horticulture, which at different periods and in different countries have passed through such various phases, corresponding to the standards of the beautiful which have prevailed."

The above excerpts express the spirit in which the work is penned, and although as it becomes necessary to deal with the microscopic aspects of vegetable morphology and physiology the language ceases to be that of everyday life, it does not degenerate into obscure involution or indigestibility of phrase so as to oppose exceptional impediment to the understanding. For those who are interested in the subject, "The Natural History of Plants" may be safely recommended as a valuable text-book and work of reference, as well as a handsome addition to the book-shelves of the library.



HARDY FRUIT GARDEN.

Thinning Fruit.—Where heavy crops of fruit are set attention should now frequently be given in order to relieve trees and bushes of some of the least promising fruits. Very few trees now carrying an ample crop are free from undesirable specimens in the shape of misplaced, deformed, undersized, badly fertilised fruits. These are much better cleared away at once, as they appropriate nutriment in common with better examples and compete with them for support. The main advantages gained in thinning fruit during the early stages are increased size and quality in those retained, less pressure on the general resources of the trees, whereby the development and perfecting of a fair crop of fruit is not only insured, but the wood and fruit buds for the forthcoming season are duly built up as well. Moderate crops are always to be preferred, because quality is proportionate to quantity as a rule. The heavier the crop the more inferior the quality of the produce. The less in quantity, the finer in size, better coloured, and more richly flavoured fruit follows as a matter of course.

Apricots.—These, the earliest in developing of stone fruits, ought now to have the final thinning. Leave the individual fruits 4 to 6 inches asunder, the latter distance being sufficiently near for the largest growers. The trees will have been thinned previously to some extent, but if not, the wholesale removal of all the fruit at once ought not to be carried out, but the operation spread over short intervals. Cut away those in awkward places such as the back of branches first, next dealing with fruits likely to wedge themselves against nails or junctions of wood, finally giving a general thinning and apportioning the fruits equally over the trees.

Peaches and Nectarines.—Continue to thin and regulate the swelling fruit; every relief is of benefit. Too many fruits are a great strain upon stone fruit trees. The stones require feeding and building up just as much in a small, inferior example as they do in larger, and this is done at the expense of the fleshy portions of fruits when these have set freely, and are allowed to develop unthinned. The final thinning should take place when the stones are formed, leaving the individual fruits on moderately vigorous trees 9 or 10 inches asunder. Judgment must, however, be used in this respect, and the capabilities of each particular tree ought to be studied. One in a weakly condition must not carry more than a very thin crop, and the fruits left ought to be situated on vigorous parts in comparison with other branches. Gross growing trees may often have their vigour subdued by allowing a fuller crop than usual, the same principle applying to the branches, some of the latter perhaps having no more strength than is necessary to perfect the young wood for the future crop. Such branches had better carry no fruit at all.

Plums.—Many varieties of Plums have set freely, and may with advantage be thinned, especially on walls, where the finest fruit is usually looked for and secured. Bush and standard trees having little or no crowded wood, and otherwise in good condition, will be able to carry a good crop without severe thinning.

Cherries.—Morello Cherries trained similarly to Peaches are furnished with abundant crops of fruit, but old trees trained on the spur system, which is the least desirable method for this fruit, are not so freely occupied. The sweet Cherries grow in clusters on spurs or two-year-old wood, and where fine fruit is desired reduce each cluster to half its number, clipping out the smallest and ill-shapen first. Cut out all the small fruits of the Morellos, and clear away the unfertilised flower stems. Too free cropping is not good for Cherries, the same reasons applying as for other stone fruits.

Pears.—The best fruits can now be perceived by reason of their swelling freely. Such are the best to retain, but if numerous those may eventually be reduced in number. It will suffice at present, however, to clip out the small, ill-formed examples, and any growing in wrong directions. Pears of the best quality cannot be produced without judicious thinning. To bring out their full flavour two on a spur are sufficient. The very finest specimens can only be secured by one alone being retained. Wall fruit usually finishes the best. Trees in any position that did not perfect their fruit well last year should have the crop reduced to one-third this season. This in conjunction with manurial assistance during the swelling will materially assist the development and ultimate perfecting of the fruit.

Apples.—The first thinning of newly set Apples may take place, merely clipping away the very smallest now as well as all useless flower stems and decayed petals, which, being allowed to remain provide a retreat for insects and maggots which attack the young fruits.

Gooseberries.—Gooseberries being so useful in a green state are usually fairly well thinned immediately they gain a moderate size. Those on the lower branches may be cleared away entirely, leaving the bulk of the fruit on the higher parts where air and light may act upon them. To produce extra fine fruits the berries must be freely thinned.

Currants.—It is seldom necessary to thin Currants, but if fine bunches of fruit with large juicy berries are wanted for dessert or exhibition, thin some of the bunches on a few of the best and most vigorous trees, affording additional assistance for increasing their size by applications of liquid manure.

Strawberries.—Strawberries just going out of flower or commencing swelling may be freely thinned. Cut away the least prominent either of flowers or fruits. From those fruits swelling rapidly select the best shaped examples with strong footstalks. Some of the weakest bunches of flowers or fruit may also be thinned with advantage.

FRUIT FORCING.

Pines.—*Providing for a Successional Supply of Fruit.*—Pine plants yield, as a rule, the finest fruits when they show these ten to twelve months from the time the suckers are potted, but some allowance must be made for the size of them when first started, also for autumn-potted suckers, which have to make a part of their growth under adverse influences. Plants that were potted last September will now be showing fruit; if not, means should be adopted to effect it. This can be done by subjecting those of that age not now exhibiting signs of fruiting—a thick sturdy base and the leaves commencing to open in the centre of the plant—to comparative rest for a period of four to six weeks, lowering the heat at the roots to 75°, admitting air fully at 75° to 80°, and letting the temperature fall to 75° before closing the house for the day. Very little fire heat will be necessary, but it must be afforded to prevent the temperature falling below 60° at night and to secure 65° by day. The plants must not be allowed to become excessively dry at the roots, but when a supply of water is needed afford it liberally. The smaller suckers of the plants placed this spring in the fruiting pots should be kept growing until they have well filled them with roots, when, if it be necessary, the plants can be subjected to the same course of treatment as advised for the larger plants, and these will afford a successional supply of fruit.

Potting Successional Pines.—When the strongest suckers potted last March filled the pots with roots they would be transferred to their largest pots. If they are not yet potted no further delay should be tolerated, as to retain them longer in small pots is detrimental to their after growth. Recently potted plants should have a regular bottom heat of 85° to 90°, and be thoroughly watered after potting if the soil be dry, and no more should be given until the soil becomes again in that condition, as it is necessary to exercise more care than usual at this stage, the state of the individual plants being ascertained before its application.

Young Pines.—Growing stock will be making rapid progress, and should be regularly attended to in every particular. Ventilate early in the day at 75° to 80°, to render the foliage dry before it is acted powerfully upon by the sun. Discontinue shading successional plants, but if very near the glass and the panes large a light shade will be advisable in the hottest part of the day, also for fruiting plants with the crowns in close proximity to the roof.

Peaches and Nectarines—Early Houses.—When Alexander or Waterloo Peaches are cleared off their fruit, the wood that has borne it should be cut out to the successional growths from their base for next year's fruiting, excepting those needful for extension. If the trees are too full of wood thin well, so as to admit light and air to the shoots, and thereby insure their thorough ripening. Early forced trees are liable to have the buds over-developed and to cast them; therefore, some growers leave the old wood until a later period to retard the buds, while others shade the house from bright sun with a similar object. Covering the roof lights with a thin wash of whiting and skim milk answers perfectly, using it as soon as the blossom buds are commencing to form, or from the fruit being gathered until the latter part of August. This is a good plan where trees suffer from over-maturity of the buds, and with proper regard to watering and keeping the foliage clean is effectual. Syringing should be practised in the morning and evening to free and keep the trees clear from red spider. The borders must be kept in a thoroughly moist condition, as it is important that the foliage be kept healthy as long as possible. Admit abundance of air in the daytime where the fruit is ripening, and a little at night to prevent the deposition of

moisture on the fruit, which is likely to induce decay at the apex, if not encourage attack of "spot," which is rather prevalent this year on Figs and Grapes, and in less degree on Peaches and Nectarines.

Succession Houses.—Only moderate artificial heat will now be necessary in order to admit a free circulation of air. Remove any leaves that shade the fruit too much, raising them on thin laths placed across the trellis so as to bring them with their apexes to the light. Attend regularly to tying in the shoots, stopping the laterals at the first joint, as soon as made. Any shoots that cannot be allowed to extend without crowding or encroaching on others stop at about 14 inches, exception being made of extensions. Shoots retained level with or past the fruit to attract the sap to it should be stopped to one or two joints at each break. Syringing must be practised morning and afternoon to keep red spider under, and the inside border attended to frequently with water. Admit air early in the day, and in the case of houses glazed with the best quality glass in large panes a double thickness of herring or single pilchard netting drawn over the roof lights is beneficial in very bright and hot periods, preventing the foliage browning. A little whitewash from a fine-rose syringe on the glass also diffuses the light and acts favourably, and has the advantage that the first rain washes it off and gives the much-needed light in dull periods.

Late Houses.—Let there be no delay in thinning the fruit, leaving very few more after the fruits attain the size of a Walnut than will be required for the crop, up to which stage the thinning should be gradual, and avoid overburdening the trees. It is better to retain too few rather than too many fruits, fine examples being always appreciated, whilst the indifferently swelled and quality-lacking are a source of complaint. There is no greater mistake than retaining more shoots than there is room for; if the wood is not properly formed and is not solidified as made imperfect buds result. If aphides appear fumigate on two or three consecutive evenings, having the foliage dry and being careful not to give an overdose; or apply one of the advertised insecticides, carefully following the instructions. Should mildew attack the foliage or fruit dust with flowers of sulphur, taking care to reach every part.

Melons in Houses.—When the fruit is cut from the earliest plants the old stem may be shortened back to a strong shoot near its base, removing as much soil as can be picked from amongst the roots without injuring them, supplying rather strong lumpy loam pressed well down and giving a good watering. A moist atmosphere being maintained, and the plants syringed in the morning and about 4 P.M., they will start freely, showing fruit in much less time than by planting afresh. If, however, the plants are affected with canker, or from carrying too heavy a first crop, a deficiency of water or attacks of insects, are much enfeebled, it is better to remove them, thoroughly cleansing the house after removing the old soil and placing fresh sweet compost in ridges or hillocks, planting strong plants when it has been warmed through.

Early Melons are coming in and are of excellent flavour, through the days being bright and the range of temperature considerable. Plants swelling their fruit should have a night temperature of 70°, though 65° or even 60° will do no harm when the nights are unusually cold and the days bright, 70° to 75° by day being artificially secured, admitting a little air at and above the latter, allowing an advance to 85° or 90°, closing at 80° to 85°, but so early as to raise the temperature to 90° or 95°, or 100°. Keep abundant moisture in houses containing young growing plants, feed plants liberally that have their fruits swelling, not allowing them to suffer through deficient supplies of water or of weak liquid manure. Gently damping the foliage, walls, floors, and closing at about 3.30 P.M., or as early as safe, will insure the swelling of the fruits to a good size. Where the plants are showing blossom fertilise the pistillate flowers daily to set the fruit, ensuring a somewhat dry condition of the atmosphere, not using the knife more than can be helped during that period, but pinch out the points of the shoots one or two joints beyond the fruit. Earth-up the plants when the fruit is set and swelling, and examine them frequently for the removal of superfluous growth, not allowing them to interfere with the principal foliage. Shade lightly from powerful sun, but only to prevent flagging.

Earliest Melons in Pits and Frames.—The fruits in an advanced stage should be well exposed to light by raising them on inverted flower pots with a piece of slate for the fruit to rest on, or the moisture arising beneath will cause it to decay. Admit air freely, and water only to prevent the foliage flagging. If a second crop is desired encourage about four shoots from the base of each plant, so that when the fruit is cut the old growths may be removed and the young shoots substituted. These will show fruit freely on the first laterals, every alternate lateral being rubbed off to prevent overcrowding. If a top-dressing of fresh compost be given, supplemented with a judicious supply of moderately weak liquid manure at 90°, the plants will be assisted to make a vigorous second growth.

Late Melons in Frames.—A useful crop of Melons may be obtained by making up beds now of any spent material, which from mixing and turning will generate a gentle warmth, placing over it frames that may have been used for Potatoes and bedding plants, placing in each light a barrowload of rather strong loam, mixed with a fifth part of old mortar rubbish or road scrapings if deficient of grit, and pressing it down firmly. Into this when warmed turn out a strong healthy plant, pressing the soil compactly about the roots, and giving a good watering. If the weather be bright shade for a few days. Seed may yet be sown to raise plants for frames at present occupied by tender bedding or other plants, but the Melons should be placed into their fruiting quarters with as little delay as possible.

THE FLOWER GARDEN.

Bedding Out.—Although very many tender bedding plants are already in their summer quarters there is little likelihood of their making good progress before the sunshine has had time to warm the soil. During the week ending May 19th, and which saw so many plants bedded out, the ground must have been in a cold wet state, and if the Zonal Pelargoniums and such like change from a healthy green to a bronze colour this will be largely due to coldness. Avoid saturating the soil about both these and any plants turned out later on, or the evil will be aggravated. Give enough water to keep both the old balls of soil and roots as well as the soil about them uniformly moist, but do not flood the beds every evening. Frosts may yet be experienced, and are particularly to be feared after hailstorms. It is well, therefore, to be prepared for them. Benders or Bean stakes fixed over the beds would support mats, Apricot blinds, and such like, and these would ward off frosts and prevent a serious check to the plants. A few fairly large fresh branches of deciduous trees, fixed so as to lightly overhang the beds or borders, would also as a rule afford ample protection from frosts, and a light shading of these in the daytime will be beneficial to plants moved with only a few roots.

Zonal Pelargoniums.—If properly hardened these will withstand light frosts. They thrive best and flower well in a fairly rich free working soil, but will prove most effective in a somewhat hot and dry position, especially if plenty of light and air can reach them. The flowering varieties are most showy in masses or broad bands, and particularly in the centres of plain beds with appropriate edgings. The bronze, silver, and golden leaved varieties are also very effective massed in the centres of small beds, or they can be used either dotted among Violas, Iresines, Lobelias, or Begonias. Tall plants should be planted in a sloping direction with a view to pegging them down neatly over the ground, but bushy ones may well be kept upright, though avoid crowding. Thick planting is right enough for immediate effect, but when the plants begin to overrun each other they cease to flower freely.

Tuberous Begonias.—Where and when Zonal Pelargoniums fail, these Begonias not unfrequently succeed admirably. They thrive and flower grandly during a showery season, and are at their best when Pelargoniums are damping badly. If they partially fail it will mostly be due to poverty and dryness at the roots. The beds, therefore, should be extra well prepared for them, by freely mixing decayed manure, leaf soil and, if it can be spared, some fresh loam with, or substituting it for, the ordinary garden soil. This coupled with a good mulching of very short manure or cocoa-nut fibre refuse and occasional soakings of water would keep them in a vigorous floriferous condition during a hot and dry summer. Root-bound plants in small pots should be soaked in water, and have some of the roots carefully loosened prior to planting, or they may be a long time in starting growing strongly. Tuberous Begonias really move best out of boxes or beds of fairly rich soil. In some instances they are effectively used in separate colours as much as Zonal Pelargoniums are bedded out, and in mixture are also very beautiful. Very imposing beds may be formed with the aid of a groundwork of Begonias with variegated Maize, Acacia lophantha, herbaceous Lobelias, small Cannas, Cyperus natalensis, and similar plants dotted thinly among them, with Chamaepeuce diacantha, Ophiopogon spicatum, variegated Agapanthus, and other ornamental foliaged plants nearer the margins. Standard Fuchsias in the centres of circular beds of Begonias are very effective.

Other Begonias.—The fibrous-rooted Begonias are fast becoming popular as summer bedding plants, and none more so than the Semper-florens group, white, pinkish white and rose coloured. Old plants may be freely divided and planted when the weather is safe, not before. Seedlings raised early in the year and grown to a good size in boxes are, however, the best for planting out, and these would lift well in the autumn for winter flowering. B. Carrieri is well adapted for bedding out, and so also is the old fashioned but pretty B. Weltoniensis, B. Ascotensis and B. hybrida floribunda. All are suitable for either mixed beds or for massing in the centres of small beds.

Verbenas.—These, again, require good culture, or otherwise they are liable to fail. Seedlings naturally grow stronger, and will thrive and flower freely in poorer soil than will those raised from cuttings, but the latter pay well for being planted in a bed or beds prepared and treated much as advised for Tuberous Begonias. If the start is made with clean, healthy, young plants, and these are given good room, each would soon cover a circle of ground 1 foot in diameter, also flowering grandly in all weathers. The old-fashioned V. venosa is too weedy for neat beds, but is very suitable for mixing with variegated Veronicas, tall Centaureas, and similar plants.

Violas and Calceolarias.—These ought to be planted early, and more than ordinary care be taken with them, or otherwise there will be many failures. Violas when planted late and in poor dry soil are almost certain to mildew badly, while Calceolarias under similar conditions not unfrequently collapse wholesale. See that they are in a thoroughly moist condition at the roots before they are lifted, and move with a moderately large ball of soil about the roots. If planted in succession to spring-flowering plants first well moisten the soil, and then mix decayed manure freely with it. Avoid lifting too many plants at one time, as all should be replanted quickly. Give a good watering, and at once mulch with more of the manure, leaf soil, or cocoa-nut fibre refuse. If Violas are mixed with bronze, silver, or golden-leaved Zonal Pelargoniums they will be very effective when flowering freely, and if they fail later on their places may be taken with late-raised Tuberous Begonias.

Various.—The moderately strong growing *Heliotropes* are very effective when massed in the centre of beds, and they are also suitable for using as a groundwork for fine-foliaged plants. Herbaceous *Lobelias* should be planted early, and have well prepared sites. The dwarf bedding *Lobelias* ought also to be given moderately good soil to grow in. Golden *Pyrethrum* and *Ageratums* are less fastidious, and the *Cineraria maritima* grows strongly in poor soil. *Centaureas* should have a more moist position, *Polemonium coeruleum variegatum* requiring even more moisture at the roots. *Petunias*, especially seedlings, are the most floriferous in dry, hot positions, and with these *Marguerites* or *Paris Daisies* may well be associated. *Antirrhinums* also succeed in dry positions, the dwarf white variety being very effective in masses. *Pentstemons* should have rather richer soil, as also ought *Asters* and *Stocks*. *Gaillardias* are not gross feeders, and would do well in masses if the position is not much shaded. Let *Dahlias* have a rich soil, and ample room; but *Sunflowers* will grow strongly in ordinary garden soil. When filling beds leave spaces for *Iresines*, *Coleuses*, and *Alternantheras*, as these ought not to be planted for another fortnight. Sub-tropical plants generally should be kept in a cool house for a similar time, and still longer in all but the most favoured districts.



APIARIAN NOTES.

BETWEEN SPRING AND SUMMER.

BEES in most places in the United Kingdom bred much during the winter months, which compensated for the loss of adult bees so great throughout the whole season. The latter half of March being so fine, stimulated the bees to a greater extent than many experienced bee-keepers remember them to hitherto have been at such an early period. Had similar weather continued swarming would have been general in most places during April; but a change of weather set in, thunder, hail, rain, and a much lower temperature retarded growth, chilling many bees and put back hives greatly. Early in May similar wintry weather continued, with a still lower temperature than the preceding month. On the 10th I had hopes of an improvement, and it came on the 12th, but lasted three hours only. The barometer had risen to 30°, but it continued to rain and a cold easterly wind prevailed. For about four days the thermometer stood between 38° and 42°. For three hours on the 12th it rose to 65°, the highest it has been; on the 17th near sunset it rose to 45°, and on the 18th, the date of writing, it is improving.

Everywhere about this locality bees commenced drawing brood without warning, but where timeous feeding was given all went well. In some cases, however, where it had gone on too long, the bees refused to feed as they ought, so they were reduced both in numbers and vigour. The result is, taking them in the aggregate, they will be weeks later this year than they were in 1893, but with favourable weather not more so than in the average of years. The strain they have had to contend with has doubtless told upon queens. Swarms may therefore not be so large as they are in ordinary seasons when there is much less loss of life, and the vigour of queens maintained to the last. Regnant queens need not be expected to keep up their fertility till the end of the season, but in all likelihood many of them will be superseded by one of the young ones bees instinctively raise on the decline of their mother. To prevent the bees doing this the bee-keeper should stretch a point and do so for them at the earliest opportunity, for upon keeping youthful fertile queens depends the profit both in the present season and that which is to come.

At present matters are far from being promising from a bee-keeper's point of view. He should therefore aim at having his hives in the best possible condition to embrace the opportunity, brief or extended, should honey weather appear. I do not hold the same views as some persons do concerning the profit from bees, but certainly advise as many of the rural population who have the convenience to keep a few hives, even if none of the honey should be sold.

CHLORIC DROPSICAL FEVER.

Some time since I mentioned the recovery of a hive of bees from this the most dreadful scourge of the apiary. A second case has now to be reported, the bees being convalescent; but whether on the same grounds as the first I cannot say, as many queens were superseded last autumn unknown at the time to me. In some parts of America it has destroyed whole apiaries, and near me numerous cases are reported. It would be incautious to attribute this disease to one variety of bee, but it is a well-known fact that it was upon that account, and impurity of the race, that I discarded the Italian bees. In one case the sufferers are *Punics*, crossed with a pure queen, but in two of these cases there are evident signs of Italian blood. As none of these instances have been so virulent as those I first experienced about 1875, it would be rash of me to say the

disease yields to medical treatment; but in one case after I fed with half a gill of alcohol the bees ceased dying.

The disease appears to be sporadic. When the contents of the intestines are viewed through a microscope it presents a conglomerated mass of flattened cells, but whether that be the cause or effect I am not prepared to say. Long before the abdomen becomes swelled the healthy bees attempt to expel them, and owing to the pubescence being rubbed off assume a brilliant black shiny appearance. When any of these shiny bees are seen, medicated food may be given them, and the bee-keeper will be acting wisely if he refrains from breeding queens from affected hives. I am on the eve of putting the affected bees to a more searching microscopical examination, and will let your readers know the result of the investigation. Should untoward weather continue feed every hive liberally.—A LANARKSHIRE BEE-KEEPER.

TRADE CATALOGUES RECEIVED.

Richard Dean, Ranelagh Rd., Ealing, W.—*New & Choice Flower Seeds*.
De Vries & Co., Aurora Nursery, Deverwigh, Holland.—*Dutch Flowers, Bulbs, and Roots*.
Keynes, Williams & Co., The Nurseries, Salisbury.—*Dahlias and Bedding Plants*.
The Yokohama Nursery Co., Limited, Nakamura, Yokohama, Japan.—*New Chrysanthemums*.



*All correspondence should be directed either to "THE EDITOR" or to "THE PUBLISHER." Letters addressed to Dr. Hogg or members of the staff often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post, and we do not undertake to return rejected communications.

Seedling Pelargonium (W. S.).—The flower arrived in rather a crushed condition, but the seedling is evidently worth preserving. You should propagate it extensively.

Vine Shoots Specked (J. H.).—It would be of no use printing your letter. If you send specimens in a box so that they arrive in a fresh state they shall be carefully examined, and a reply given on the subject. You might also state the age and variety of the Vine, also if it is the only one affected in the house.

Cucumber Plants Diseased (A. M.).—The plants are infested with the stem eelworm (*Tylenchus obtusus*), which is much shorter and thicker than the Clover-stem eelworm, but is provided with a very fine, sharp, rather long spear, by which it can penetrate the stems of plants readily, and enter their tissues. The stem of one of the plants just above the seed leaves was quite decayed and alive with eelworms. They are introduced in the soil or manure. Those you must thoroughly disinfect either by exposing to a temperature of 200°, on an iron plate with a fire under, and turning the material so as to heat every part without charring any of it, or by saturating the soil with soluble phenyle (Little's), $\frac{1}{4}$ pint to 4 gallons of water. The solution of phenyle may also be used for disinfecting the house, using it on whatever is likely to harbour the eelworm. There are several treatises on Cucumber growing, but no one of recent date and treating the subject scientifically and practically.

Ferns from Spores (Osmunda).—There is no wonder at your not being able to raise seedling Ferns in the soil, for it is very wet and of a vegetable nature, evidently leaf soil, swarming with algæ and fungus, and there are also eelworms (*Tylenchus obtusus*) and the legless grub of *Otiorynchus sulcatus*. The fungus is *Pythium De Barryanum*, but there is other mycelium, possibly that of *Botrytis* or *Polyactis cinerea*, and these are the cause of the "damping off." We are not prepared to recommend any application for the destruction of the fungus, but you may try a 1 per cent. solution of permanganate of potassium (Condy's fluid) sprinkling the pans with it. You may also afford the pans all the light and air you possibly can with safety, and apply no more water than is necessary to keep the prothallus from shrivelling. The fungus cannot live under those conditions. In order to avoid disaster in future the soil should be heated on iron plates by means of a fire underneath, not charring, but heating it sufficiently to kill the fungus spores, say to 200° or boiling point 212°, then the soil may be put in a sack, buried in the earth, and kept there until moist, when it may be used with every prospect of securing good results.

Diseased Rose Foliage and Buds (J. C. C.).—The Rose shoots came to hand in excellent condition. We are sorry to have our examination of the former specimen confirmed by the fresh ones—namely, they are attacked by the (fortunately) rather uncommon fungus, *Peronospora sparsa*, which is only in degree less virulent than the Potato disease. It does mischief by sometimes causing the leaves to become patchy and fall in great numbers, while in other cases the young wood and flowers are destroyed. The best remedy is to spray the trees with a Bordeaux mixture of moderate strength, or $1\frac{1}{2}$ lb. of sulphate of copper dissolved in 3 gallons of water, and $1\frac{1}{2}$ lb. of quick-lime slaked in a vessel by itself, forming it into a thin whitewash, then pour it slowly (when cool) through a hair sieve into the vessel containing the copper solution, mixing and diluting to 11 gallons. The mixture should be applied with a spraying apparatus, coating the plants with the finest possible film. Only as much of the mixture should be made as will suffice to dress the trees, for it must be used the same day as made. It may be necessary to repeat the application in ten days or a fortnight. The house should be kept rather warm and dry by careful ventilation.

Primula Auricula (Amateur).—The species, a native of Switzerland, has yellow flowers, and so have two of its varieties occurring there, *Primula Auricula lutea* and *P. A. calycantha*. A third variety, also a native of Switzerland, *P. A. integerrima*, has flowers of various colours. It is probable that all these ministered to the production of our garden varieties. As long ago as 1848 we published the following notes on this flower:—The *Auricula* is described and figured by Gerarde in his "Herbal," which appeared in 1597, and it is there called the Bear's-ear or Mountain Cowslip. He says there were then many sorts, giving drawings of eight, the yellow, the purple, the scarlet, the blush-coloured, and several reds. Like Bauhin, he gives them the specific botanical name of *Auricula Ursi*; but by Matthioli and others it was named *Sauicula alpina*, from its supposed healing virtues and mountain birth-place. It was often called by ladies the French Cowslip. It is very certain that they were thus early much cultivated by French florists, for there is a poem in their praise in a curious work published at Douay in 1616, entitled "Jardin d'Hyver," and with the verses are numerous drawings of the *Auriculas*, or *d'Oreilles d'Ours*, as they are there called. Gesner named it *Lunaria anthritica* and *Paralytica alpina*. Parkinson says it obviously belonged to the Cowslip family, but Ludwig was the first to arrange it there under the generic name of *Primula*. Gerarde says that the eight kinds he enumerates were then commonly grown in the gardens about London, but it is evident they were not much esteemed; nor is any notice taken of raising varieties from seed. This neglect soon passed away, for Johnson, in his edition of Gerarde, published in 1633, says that there were then a very great many varieties of these flowers growing in the gardens of Mr. Tradescant and Mr. Tuggie. Tradescant's garden was at Lambeth, and he, at the time Johnson wrote, was gardener to Charles I.

Muscat of Alexandria Grapes Shankd (Z. Y. X.).—The bunches are shanked, both in the footstalks of the berries and the stems of the bunches. It is a bad case, and the more remarkable as you say the borders are both (inside and outside) good. There is really nothing the matter with the tissues of the live parts of the bunches internally, but there are discoloured fungal spots on the epidermal cells externally. The underlying cells are emptied of their contents, and there is mycelia of a fungus, which is septate, and from the short portions hypha were springing, but far too young for identification. We, however, found some spores of *Botrytis cinerea*, one of them pushing a germinal tube. These are not the cause, so far as we are able to determine at present, of the shanking, but unfortunately we found abundance of the rod-like bodies which appear to proceed from the seeds, and by their needle-like concentration cut off the supply of sap to the berries at the footstalk. These bacilli have possibly got there in the sap, and it is difficult to ascertain why they attack the reproduction parts of the Vine only. It is by no means certain that they are the cause of shanking, and it is well known that proper structures, borders, and good management can prevent or reduce shanking to a very great extent. We question if the borders be "very good," or, if they are, the roots of the Muscats have not what they need as regards warmth in an outside one when the Vines are started early. This we consider to have had something to do with the shanking, and we should certainly advise confining them to the inside border. The 5 feet wide border is quite sufficient for the Vines four years planted. As regards the ventilation of the house in front there seems room for improvement, but there is really no need for front ventilation if the top be sufficient, but of that you say nothing, confining your remarks to the front. There is always a rush of cold air through bottom ventilators, especially when the top are open at the same time, and in early forcing means should be taken to modify the inrush of cold air by placing some hexagon or other close netting over the openings. Between the two, the outside border and cold air giving, lie the inducement to shanking in your case, which is a great pity, as the Grapes are really very fine for the time of year, and they may possibly have been brought on too rapidly, as Muscat Grapes cannot well be had ripe before the middle of June when the Vines are started in January. This may have conduced to the shanking, and we mention these matters in order to assist you to a satisfactory deduction for future guidance.

Names of Plants.—We only undertake to name species of plants, not varieties that have originated from seed and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in firm boxes. Slightly damp moss, soft green grass or leaves form the best packing,

dry wool the worst. Not more than six specimens can be named at once, and the numbers should be visible without untying the ligatures, it being often difficult to separate them when the paper is damp. (D. H.).—1, *Lonicera tartarica*; 2, *Xylosteum* (*Lonicera*) *involucratum*; 3, *Crataegus mexicana* var.; 4, *Spirea hypericifolia*; 5, *Roses* are florists' flowers, about which see note above; 6, *Daphne cneorum*. (G. T.).—Large spray, *Oncidium serratum*; small one, *Odontoglossum hastilabium fuscum*. (W. P.).—*Cercis siliquastrum*, the Judas Tree; see note in the *Journal of Horticulture* for May 3rd, page 352. (M. H. S.).—*Saxifraga granulata flore pleno*; though succeeding well under trees this plant will also grow in the border and on rockeries. (D. B.).—1, *Cytisus hispanica*; 2, *Cerasus* (*Prunus*) *padus* (the Bird Cherry); 3, *Cornus sanguinea*. (H. S.).—1, *Allamanda cathartica*; 2, *Maxillaria picta* (poor form); 3, *Davallia canariense*.

COVENT GARDEN MARKET.—MAY 23RD.

MARKET very depressed owing to the reports from all parts of the country of the effects of the frosts.

FRUIT.

	s.	d.	s.	d.		s.	d.	s.	d.
Apples, per bushel ..	2	6	10	0	Peaches, per doz. ..	6	0	18	0
Tasmanian, per case ..	8	0	12	0	Plums, per half sieve ..	0	0	0	0
Cobs	45	0	50	0	St. Michael Pines, each ..	2	0	6	0
Grapes, new, per lb. ..	2	0	3	0	Strawberries per lb., morn-				
Lemons, case	10	0	15	0	ing gathered	1	0	3	6

VEGETABLES.

	s.	d.	s.	d.		s.	d.	s.	d.		
Asparagus, per bundle ..	2	0	to	5	0	Mushrooms, punnet	0	9	to	1	0
Beaus, Kidney, per lb. ..	1	0	1	3	Mustard and Cress, punnet	0	2	0	0	0	0
Beet, Red, dozen	1	0	0	0	Onions, bushel	3	6	4	0	0	0
Carrots, bunch	0	3	0	4	Parsley, dozen bunches ..	2	0	3	0	0	0
new, bunch	0	9	1	0	Parsnips, dozen	1	0	0	0	0	0
Cauliflowers, dozen	1	6	3	0	Potatoes, per cwt.	2	0	4	6	0	0
Celery, bundle	1	0	1	3	Salsafy, bundle	1	0	1	5	0	0
Coleworts, dozen bunches	2	0	4	0	Scorzonera, bundle	1	6	0	0	0	0
Cucumbers, dozen	1	6	3	0	Shallots, per lb.	0	3	0	0	0	0
Endive, dozen	1	3	1	6	Spinach, bushel	1	6	3	0	0	0
Herbs, bunch	0	3	0	0	Tomatoes, per lb.	0	6	1	0	0	0
Leeks, bunch	0	2	0	0	Turnips, bunch	0	3	0	4	0	0
Lettuce, dozen	0	9	1	0	new, bunch	0	8	0	10	0	0

AVERAGE WHOLESALE PRICES.—CUT FLOWERS.

Orchid Blooms in variety.								
	s.	d.			s.	d.	s.	d.
Arum Lilies, 12 blooms ..	1	6	to	3	0	Myosotis or 'Forget-me-		
Azalca, dozen sprays.. ..	0	4		0	6	nots, dozen bunches ..	1	6 to 3 0
Bluebells, dozen bunches	1	0		2	0	Narciss, various, doz. bunches	2	0 4 0
Bouvardias, bunch	0	6		1	0	Orchids, per dozen blooms	1	0 9 0
Carnations, 12 blooms ..	1	6		3	0	Paeonics, dozen bunches ..	6	0 15 0
Cornflowers, doz. bunches	2	0		4	0	Pansies, dozen bunches ..	1	0 2 0
Cowslips, dozen bunches..	1	0		2	0	Pelargoniums, 12 bunches	6	0 9 0
Eucharis, dozen	2	0		4	0	Pelargoniums, scarlet, doz.		
Gardenias, per dozen ..	1	0		4	0	bunches	4	0 6 0
Iris, dozen blooms	0	6		1	0	Primula (double), dozen		
Lilac (French) per bunch	2	6		4	0	sprays	0	6 1 0
Lily of Valley, doz. sprays	0	6		0	9	Pyrethrum, dozen bunches	3	0 6 0
doz. bunchs.	4	0		8	0	Roses (indoor), dozen ..	0	6 1 0
Lilium candidum, dozen						„ Tea, white, dozen ..	1	0 3 0
bunches.. .. .	12	0		18	0	„ Yellow, dozen	2	0 4 0
Lilium caudatum, dozen						Roses (French), per dozen	1	0 2 6
blooms	0	6		0	9	Roses, Safrano (English),		
Lilium longiflorum, per doz.	2	0		4	0	per dozen	1	6 2 0
Maidenhair Fern, dozen						Roses, Maréchal Niel, per		
bunches	4	0		6	0	dozen	1	6 5 0
Marguerites, 12 bunches ..	1	6		4	0	Tuberose, 12 blooms..	0	4 0 6
Mignonette, 12 bunches ..	3	0		6	0	Violets (French), per		
Moss Roses (French), doz.						bunch	1	0 1 6
bunches	6	0		12	0	Wallflowers, doz. bunches..	2	6 4 0

PLANTS IN POTS.

	s.	d.	s.	d.		s.	d.	s.	d.	
Arbor Vitæ (golden) dozen	6	0	to	12	0	Hydrangea, per dozen	9	0	to 18	0
Arum Lilies, per dozen	6	0	12	0	Ivy Geraniums	5	0	8	0	
Aspidistra, per dozen	18	0	36	0	Lilium Harrissi, per dozen	15	0	30	0	
Aspidistra, specimen plant	5	0	10	6	Lobelia, per dozen	4	0	6	0	
Cineraria, per dozen	6	0	9	0	Lycopodiums, per dozen	3	0	4	0	
Dracæna terminalis, per					Marguerite Daisy, dozen	6	0	12	0	
dozen	18	0	42	0	Mignouette, per doz.	6	0	9	0	
Dracæna viridis, dozen	9	0	24	0	Musk, per dozen	4	0	6	0	
Ericas, per dozen	9	0	24	0	Myrtles, dozen	6	0	9	0	
Euonymus, var., dozen	6	0	18	0	Nasturtiums, per dozen	1	6	6	0	
Evergreens, in var., dozen	6	0	24	0	Palms, in var., each	1	0	15	0	
Ferns, in variety, dozen	4	0	18	0	„ (specimens)	21	0	63	0	
„ (small), per hundred	4	0	8	0	Pelargoniums, per dozen	9	0	18	0	
Ficus elastica, each	1	0	7	6	„ scarlet, per doz.	4	0	6	0	
Foliage plants, var., each	2	0	10	0	Roses, various, per dozen	12	0	36	0	
Fuchsia, per dozen	6	0	9	0	„ (Fairy), per dozen	9	0	12	0	
Genista, per dozen	6	0	12	0	Spiræas, per dozen	6	0	12	0	
Heliotrope, per dozen	6	0	9	0	Stocks, per dozen	3	6	5	0	

Roots in variety for planting out, in boxes or by the dozen.



PROFITABLE FARM PRODUCE.

ONCE more do we return to this important subject, as indeed we are bound to do in these days of rapid change, of transition from the old order of what has been aptly termed easy going farming, to that of the present, which compels every thoughtful farmer to weigh well each thing that is done in the farm, in

view of that final test of profit and loss to which all he does is subjected. Will it pay? is the question which the new order of things compels him to ask. If he is prudent, if he is as sensible of the risk of loss in his business as he ought to be, the query will ever be in mind, and its influence will induce judicious change from crops—vegetable or animal—which do not “pay”—*i.e.*, which have ceased to be profitable, to those upon which a profit is known to be possible under certain conditions. Clearly it is his affair to ascertain all about such conditions in every aspect bearing upon production and disposal. His sole aim is to master every detail of production and sale—the best produce, the best market, the best way to sell, the best purchaser from whom the nimble ninepence may be had, a rapid turn over of capital, a steady accretion of profit. In this he has a wide field. Foreign competition undoubtedly tells, but it has not rendered farming in this country impossible. It has dealt a fatal blow to ignorant practice, to slothful indulgence, to unjust covenants, to unfair burdens upon the land, to business inaptitude all round.

It follows, then, that the true Briton, thoroughly imbued with the national trait of never being beaten, has set himself to see what he can do to hold his own in the contest—how he can change and adapt his practice to the times. Looking to Government returns of the value of imports, he finds that we pay annually to foreign producers for butter alone (not margarine) £11,965,284, for cheese £5,417,777, for eggs £3,793,018. We might go on counting up the millions paid besides for poultry, pork, bacon, hams, lard, fruit, vegetables, mounting up to a total value in round numbers of about £40,000,000. But the fact of something approximate to this vast sum being paid to the foreigner every year ought surely to act as an incentive upon the home producer to try and turn some of this golden stream into his own pocket. For his encouragement it may be said that there is a decided preference for high-class home-grown produce. At the present time, when hundreds of tons of foreign eggs are pouring into this country, and the retail price is anything from ten to twenty for 1s., a fresh English egg costs 1½d., or eight for 1s., and shopkeepers in London have no difficulty in obtaining that price for them. Place twice the present number of them upon the market, let the shopkeeper, the provision merchant, take off fifty per cent. in his price, so that the metropolitan consumer can purchase a new laid egg for 1d. in May, and there would still be a capital profit for the producer, even if he had to purchase some cheap foreign corn for his poultry, which may or may not be advisable. An abundance of home-grown Oats enables him to feed and fatten poultry in the best way. Often have we wondered why poultry farming has not been turned to more generally by East Anglian corn farmers as one of the possible improvements. We once ventured to suggest this to a certain farmers' club in Suffolk, but our suggestion was treated with scorn; corn, and corn alone, was evidently their creed. It is undoubtedly true, as the “Pall Mall Gazette” said recently, “the English farmer is terribly difficult to move.” Probably the recent visit of a large party of representative men to the Sussex poultry district may tend eventually to an extension of judicious poultry rearing by farmers. That is what is wanted, and not the floating of new companies. By the term of judicious poultry rearing we mean simply such an extension of the farm poultry department as its importance merits.

In the matter of dairy produce we must have in cheese more attention to quality. It is just because this has been done so well and so generally in Canada that Canadian Cheddar holds a leading place among cheese in this country. Go to any large stores in London, taste home made and Canadian Cheddar, and the superiority of the flavour of the imported article is so pronounced that preference is almost invariably given to it. In butter there is the same want. Repeatedly has it been made

clear that for home produce to hold its own with Danish and Brittany butter there must be a guarantee of uniform quality. To take the leading position in the trade, which it ought to hold, and for dairy farmers to derive full benefit from it, we must have co-operative butter factories, then quantity and quality would both be assured, and the foreigner would be met in the right way.

WORK ON THE HOME FARM.

“Is there any remedy for wireworm among corn now?” we were asked recently. Our reply was, if the corn is not too high a couple of turns with a ring or Cambridge roller and a dressing of nitrate of soda answers best. The roller crushes many of the tunnels which the pest makes near the surface, and the nitrate accelerates growth and soon brings the corn out of harm's way. Mark such land, and when broken up in autumn give it a very heavy dressing of salt. We have seen evidence of the presence of wireworm in many a corn field recently; in one, a Wheat field, very much of the growth was stunted from poverty of soil and the land was terribly foul with thistles. It was a small farm and was certainly not an example of good practice. Such corn growing can have nothing satisfactory about it—certainly it would not pay expenses, to say nothing of profit.

Some heavy land sown with roots in ridges had the surfaces of the ridges dried into a hard cake, and as the plant was not visible the light Barley rollers were run over the ridges, the crust was broken and the plant soon appeared. Had not this been done there would have been a full, regular plant, as that under the harder portion could not push through. Here is another example of the value of mechanical division of soils. Had that heavy land had a dressing of burnt clay, coal ashes, or other fine, hard matter well worked into the surface there could have been no crude crust from heavy rain and sunshine. This is one of the lessons, by the way, which are always cropping up, and which it is well to note as they occur, in view of subsequent improvements. Watch the soil, and make a point of gradually improving it wherever it is possible. With the soil well drained and with perfect mechanical division cultivation is comparatively easy, it is always open to air circulation, water passes through by filtration readily, seed germination is as quick as subsequent growth is brisk, and a really full crop is practically a certainty. Look well after weeds, in such dripping weather they are sure to be rampant, and thistles at any rate should be kept under now.

CROP PROSPECTS IN CHESHIRE AND LANCASHIRE.

HAVING during the past few weeks travelled through portions of Shropshire, Cheshire, and South and South-west Lancashire, I have been delighted to see on every side, even on some of the poorer soils, indications of a most bountiful season. The cereals appear to be in most places well forward, robust, and of a good colour. Meadow grass is starting well, with plenty of bottom. Clover crops will be exceptionally good. You cannot see a bare patch anywhere, and on the well farmed lands round Ormskirk I noted field after field of grandly set crops. The fine open winter and spring has enabled farmers to keep well abreast of their work, consequently the Potatoes have been put in early, and the Turnip and Mangold land all ready for the drill.

Fruit generally of all kinds seems to have set well, Pears especially again promising a very heavy crop. Therefore, given a continuance of genial spring showers, with sufficient warmth and a good harvest time, the year bids fair to make amends very largely for the shortcomings of 1893.—X.

METEOROLOGICAL OBSERVATIONS.

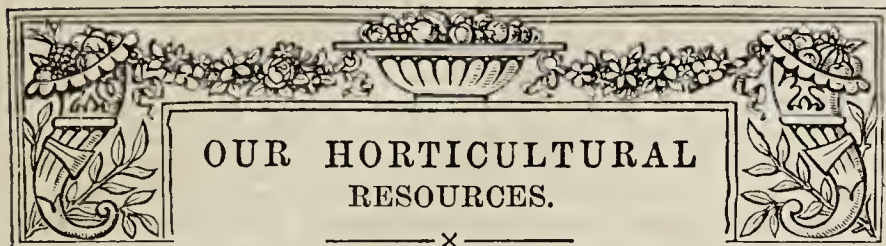
OAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude, 111 feet.

DATE.	9 A.M.					IN THE DAY.				Rain.
1894.	Barometer at 39° and Sea Level.	Hygrometer.		Direc- tion of Wind.	Temp. of soil at 1 foot.	Shade Tem- perature.		Radiation Temperature		
May.		Dry.	Wet.			Max.	Min.	In Sun.	On Grass.	
	Inchs.	deg.	deg.		deg.	deg.	deg.	deg.	deg.	Inchs.
Sunday .. 13	30.119	54.8	47.6	N.W.	49.8	62.7	40.2	112.3	34.5	0.010
Monday .. 14	30.014	55.2	47.3	S.E.	51.7	63.8	48.7	115.1	45.8	—
Tuesday .. 15	29.888	60.2	54.0	E.	52.9	71.5	47.1	114.9	38.0	0.068
Wednesday 16	29.905	63.6	58.3	N.E.	54.1	68.9	55.0	91.0	52.1	0.010
Thursday .. 17	30.138	51.9	5.4	N.	54.3	69.2	48.6	112.3	49.0	—
Friday .. 18	30.181	45.9	51.2	N.E.	54.9	69.1	44.4	115.8	40.8	—
Saturday .. 19	30.220	47.2	41.4	N.E.	54.9	55.6	42.2	108.3	38.0	—
	30.066	54.1	50.3		53.2	66.5	46.6	110.0	42.6	0.088

REMARKS.

- 13th.—Bright sunshine till 4 P.M., generally cloudy after.
 14th.—Overcast, with spots of rain till about 9 A.M.; an almost perfect day after 10 A.M.
 15th.—Fine, with a good deal of sunshine, but cloudy at times, rain in evening and night.
 16th.—Close, oppressive and threatening, with a shower at noon and occasional spots of rain.
 17th.—Fair early; generally sunny after 11 A.M., and brilliant afternoon and evening.
 18th.—Bright and fine throughout.
 19th.—Generally overcast, but occasional intervals of sunshine.
 A generally fine week, warm on the whole, but variable in temperature.—
 G. J. SYMONS.



NO thoughtful person could witness the last great exhibition of the Royal Horticultural Society without being impressed with the magnitude of the horticultural resources of this country. It is true, and we note it gladly, that there were plants rich and rare from other lands, and these, with their growers, may be assured of a hearty and genuine, if not a demonstrative, welcome in our midst whenever they may come and bring their treasures with them. Yet, though altogether excellent, their products were naturally limited, as there was no pretence to represent the gathering as an international one, and the show was, to all intents and purposes, a show of home-grown plants and flowers. This our visitors would be the first to admit, and also to recognise the wealth of produce, the infinite variety, conspicuous excellency, and the greatness of the love for and industry in the particular department of horticulture that was represented so well. That the display was appreciated, too, was most fully demonstrated by the concourse of persons who, in greater numbers than ever, packed the tents, and at times struggled with each other in the endeavour to admire some of the particular objects in the floral feast.

Some idea of the extent of this feast would be gathered from the dimensions of the tents, as recorded last week, but it is necessary to look a little more closely into the record for the adequate realisation of the facts. It has to be remembered that in all but the smallest marquee, central tabling, as wide as the space permitted, was provided, and this divided longitudinally to provide two faces for the exhibits; then side and end tables or groups occupied every available inch of the remaining space. When this is kept in mind we arrive at the fact that an aggregate length of nearly a thousand yards had to be traversed under canvas for the inspection of the exhibits, the banks and tabling no doubt averaging 2 yards wide. It will be perceived that the number of plants and bunches of cut flowers was enormous, indeed too numerous, though these were the best that could be provided at the season. It was in fact a gigantic floricultural display, and when we think of it as just what it was—a section only of the art in which our readers are interested, it will be apparent that the resources of horticulture in its widest scope are of far greater magnitude than is commonly apprehended.

The Exhibition, then, was the exponent of one only of the three departments that are included in the comprehensive term "gardening"—the section that yields beauty of the highest order, that makes the homes of various sections of the community brighter and more enjoyable than they otherwise could be; this and much more. Plants and flowers not only possess beauty, but value. They are tokens, in the aggregate, of great wealth. They also represent intellectual and industrial capacity. Their production in the highest forms by the arts of hybridization and culture calls into activity the best qualities of our race—love, knowledge, judgment, attentiveness, perseverance, and devoted labour. They cannot be had as they are in the absence of any of those attributes or qualities; and the exercise of them brings much more than pleasure as embodied in chaste forms and delightful colouration—namely, the means of livelihood to thousands who are either engaged directly in the work of production and distribution or in some of the various collateral industries which they have summoned into action. Flowers, then, have their uses—real, substantial,

vital; for while contributing powerfully to the happiness of many they afford the necessities of life to many more.

Great as was the Exhibition in question it required quite as much space again for its adequate presentation and enjoyable accessibility as was at the disposal of the managers, and it seems that more can be afforded if a suggestion of Mr. Newton, F.R.H.S., who has for many years had charge of the Temple Gardens, be carried out another year. Parallel with the Thames Embankment is a gravel walk about 30 feet wide and 400 feet long, flanked by rows of Plane trees. This walk is abandoned by visitors at the shows, who naturally prefer the lawn after passing through the marquees. There would be a great gain of space by covering this terrace walk, the lawn would be reserved to a much greater extent than now for visitors, and a magnificent floral promenade provided under canvas on the site in question. The proposition, which is eminently a practical one, merits consideration when the proper time arrives in view of another exhibition in the Gardens.

But though the Temple Shows indicate the great interest in and extent of the industry in flowers, they only in part, as above suggested, afford evidence of the horticultural resources of the country. To comprehend their magnitude we have to remember that it would be not in the least difficult to occupy a similar extent of space and very much more with fruit and vegetables, not at the same moment, perhaps, but at a seasonable time. Also it may be stated without any qualification that high and meritorious culture would be fully as well displayed in these sections as in the case of the plants and flowers, while even more persons are engaged in providing the food than the floral products of the garden. Viewed in its entirety, therefore, it becomes apparent that the horticultural resources of this country are gigantic if not unequalled, and we are convinced that nowhere else in Europe, if in the world, can greater cultural skill—as displayed in so many products—be found than is evidenced at our great exhibitions, metropolitan and provincial.

Moreover, the work of competent British gardeners teaches a wholesome lesson, if it would be learnt, that might have an important bearing on the much-needed reform of the sister art of agriculture. If the same knowledge, zeal, and persistent industry were directed to increasing the food-producing power over large areas—fields—as are existent in the small areas—gardens—a material increase of wealth must of necessity follow. Starved ill-cultivated land is useless alike in small plots and large areas. It is only under the best of culture that gardens are profitably conducted; those which are neglected or impoverished failing to be of value to the possessors. What is wanted for the rejuvenation of the land of the kingdom is an extension of horticultural methods not exactly in details and routine, but in principle of doing the utmost that can be accomplished by strenuous endeavours on sound lines, guided by the best judgment that can be brought to bear on the work in hand. The horticultural resources of the kingdom have increased and are still increasing, a great deal of the progress being due to the stimulus given to personal endeavour by the lessons in high culture as provided at exhibitions, as well as by the keen desire that exists for the acquirement of knowledge which is in various ways provided in furtherance of the object in view.

Reverting to the Temple Show we are glad to reproduce the following letter of Sir Trevor Lawrence, Bart., that appeared in "The Times." It is as follows:—

"May I ask for a small space in your columns to allow me to say how greatly the success of the beautiful show in the Temple Gardens has depended upon the tact, judgment, and unremitting exertions of the Rev. W. Wilks, Secretary of the Royal Horticultural Society? Mr. Wilks was unable to see the result of his labours, as he is suffering from a severe attack of illness, due in some measure to the impossibility of persuading him to spare himself. I should add that the admirable arrangement of the show is due to Mr. Barron, for many years the able Superintendent of the Society's gardens at Chiswick."

INDIAN OR CHINESE AZALEAS.

AMONG the many species and varieties of plants now cultivated in British greenhouses but few are more useful and beautiful than the numerous garden hybrid Azaleas which have resulted from crossing *A. amœna* and *A. indica*, or from intercrossing varieties of the latter species. The individual flowers of many of the newer productions show a decided improvement in both size and form upon the older ones, and the wide range of colour to be found among them seems to leave nothing to be desired. Why the two species *amœna* and *indica* should be termed "Indian" Azaleas seems somewhat curious to me, seeing that both were introduced from China—that old, vast, yet withal unchanging empire to which we are indebted for so many delightful floral gems; but with all our boasted knowledge of science, and her teachings, we have not yet learned to eclipse by cultural skill some of the best productions of the dreamy inhabitants of this so-called "Celestial Empire."

Perhaps one of the principal reasons which contribute towards the cultural successes of the Chinese is the careful way in which they utilise the vast quantities of natural fertilisers, which in some other countries are a source of inconvenience and loss rather than of profit. Many plants and crops seen struggling for existence in this country are brought into such a pitiable condition through pure starvation, and in nine cases out of ten this is the primary reason why Azaleas are so frequently seen in a weak or unhealthy condition. It is one of the easiest of plants to grow well if ordinary care is exercised in its treatment. What it detests is a dry atmosphere and an insufficiency of moisture during the summer, especially when growing in soil crammed with roots, from which but little nutriment can be obtained. Under such conditions weak flimsy growths, which fall a prey to the attack of thrips, are the inevitable result. Chemical manures are of immense service in the growth of Azaleas, especially during the growing season. As soon as they go out of flower all plants which do not require repotting may with advantage receive a dressing of one or other of them once a month till the flower buds are formed. It is then undesirable to stimulate them greatly until the buds begin to swell in the spring, or autumn if forced. Still, it is not wise to discontinue feeding altogether, but throughout the autumn and winter an occasional dressing will be found beneficial by keeping the leaves in good colour and maintaining the general health of the plant.

When Azaleas are grown in houses of modern construction I am an advocate for giving them more shade during the growing season than they usually receive; not a dense shade, but a continual shelter from the sun's rays. With other cultural conditions well carried out the growths made will then be strong and healthy. They may with certainty be afterwards well ripened by gradually exposing them to full sunshine, and by placing them in the open air during July and August.

It is surprising how well Azaleas will thrive in old dark houses in which many plants never do well. I have frequently grown fine plants in an old orangery having no glass roof. While the growth was being made they were placed within 3 feet of the upright lights in front, and freely syringed. By the end of June they were removed to the open air in a shady position for a time, afterwards exposed to full sunshine; with this treatment they never failed to flower freely, and at no time could I discover a thrip upon the leaves. I would strongly advise all who have old dark houses to deal with to grow Azaleas extensively, as I am quite sure they will find them succeed where many other plants fail. I like to repot whatever plants require doing directly the flowers have faded, generally shifting into pots two sizes larger, using a compost of three parts good peat, one part fibrous loam with the earthy portions beaten out, adding to these a fair amount of sharp sand, and a little charcoal broken into pieces about the size of marbles. Firm potting is an important item in their successful management, without it the difficulty of sufficiently moistening the old ball, unless rendering the new soil sodden, amounts almost to an impossibility.

During the time Azaleas are making their growth, any that are growing in soil permeated with roots should receive copious supplies of water. Let the soil once get thoroughly dry during this stage and it will require fully a year for them to recover their lost vigour. A continually sodden condition of the soil must also be avoided, and an observant cultivator should quickly find out the exact point between these extremes at which water may with the greatest advantage be given.

Syringing Azaleas once a day during bright weather helps greatly to preserve them in good condition and to keep thrips and red spider at bay. Some cultivators syringe in the morning, others in the afternoon, but where the houses are shaded I prefer doing so at midday, as my observation has led me to believe that the

plants receive the greatest benefit when so refreshed, the floors and stages being damped at other times as required.

Many lively discussions have at various times been indulged in the horticultural Press as to the respective merits of trained and untrained plants. Both have their advantages and points of beauty, and I do not understand why persons who prefer untrained plants should fall foul of others who have a liking for perfectly formed pyramids. To a great extent these things are a matter of individual taste, and I think will always remain so. Let us by all means grow them both as standards and bushes, or as perfectly trained specimens, such as would delight the eyes of old exhibitors. No matter in what form they are grown Azaleas are beautiful objects when in flower. Those plants allowed to grow in a natural form are, however, more useful for supplying cut flowers, and do not require so much time spent upon them. It is, therefore, a good plan to grow the bulk in this form, so that the trained plants need never be cut. Another point which should receive attention is that many of the strong growing varieties do not readily lend themselves to formal training; but as they produce some of the finest and most beautifully coloured flowers strict adherents to formal methods of training would have to exclude them from their collection. This is a case in point as to the wisdom of moderation in all things.

It is a decided mistake to begin training plants in a very young state, as the object in view can be attained more quickly by allowing the growth to go on almost unrestricted for a few years, merely pinching an extra strong shoot, and in the case of weak-growing varieties, training a few of the strongest shoots to a stake in the centre, so that the requisite height for forming a handsomely proportioned pyramid may be obtained; for unlike most other plants, Azaleas may easily be kept furnished at the base, but are not so easily induced to grow to the necessary height, and it is far better to allow the plants to form natural bushes than to succeed in producing only "dumpy" apologies for pyramids. In forming the trellises a good guide toward securing well-proportioned cones is to let the base measure half the height, or nearly so. Two pieces of wood about half an inch square, held firmly to the rim of the pot by being fastened to a wire underneath it, form a good foundation for the trellises. To these a strong iron ring should be fastened. If a stake is then driven in the soil near the centre of the pot, and cut off at the requisite height, a screw or nail may be inserted at the top, so that wires may be strained from the top of the stake to the bottom ring, at distances of from 6 to 9 inches asunder all round it. Another stout ring is usually required about half way up to keep the whole framework in position. Given a well made trellis to start with, it is not a difficult matter for anyone, with a little practice, to train the shoots with mathematical precision, so long as there are shoots in abundance for the purpose. —BLAIT BOWKAIL.



CYPRIPEDIUM CALLOSUM SANDERÆ.

AMONG the many striking novelties exhibited by Messrs. F. Sander & Co., St. Albans, at the Temple Show last week, but few attracted more attention than did *Cypripedium callosum* Sanderæ, shown there for the first time. As will be seen by referring to the illustration (fig. 68), the flower is not remarkable for its size; it being as regards formation similar to *C. callosum*, but in colour it differs considerably. The dorsal sepal is rather broad, white, veined with emerald green, as are the petals. The lip is large and of a bright green shade. It is said that this charming novelty was imported with a consignment of *C. callosum*. A first-class certificate was awarded for it on the above-mentioned occasion.

CATTLEYA LAWRENCEANA.

This is one of the most showy and distinct Cattleyas now flowering. It is a variable species as to colour, some being much paler than others, but all are very good. It belongs to the labiata section, but requires more heat than the majority of species, and in company with *C. aurea* and *C. superba* will thrive in a light sunny position. *C. Lawrenceana* was introduced from British Guiana in 1884.

ONCIDIUM TETRAPETALUM.

Although one of the smallest flowered this little *Oncidium* is very elegant. The erect spike is closely studded with flowers

which are each about an inch across, white, spotted and streaked with brown and yellow. As the name implies this *Oncidium* has only four petals, the two lower sepals being united. It does best in very small pans suspended from the roof in the *Cattleya* house.

CATTELEYA MOSSIE.

Many of our most useful decorative Orchids are fortunately also cheap, and this fine old *Cattleya* may be mentioned as an instance. In its best forms it is equal to any for size, as the following measurements of a flower I have before me will, I think, prove:—From the end of the top sepal to the margin of the lip is exactly $8\frac{1}{4}$ inches; measured across, over the petals, 9 inches; these latter are 3 inches wide, the labellum $2\frac{1}{4}$ inches. The plant from which the flower was cut is a large one, with over twenty blooms open on it. I placed several plants of this *Cattleya* in a cool house last winter, together with others of the labiata section, but the difference between these, and others kept in a temperature as near 50° as possible, is so marked that the experiment will not be repeated. When a sufficient number of plants are grown the blossoms of *C. Mossie* may be had from early in April until August, and the individual flowers usually last in good condition for about three weeks.

CYCNOCHES CHLOROCHILON.

The Swan Orchids, as the *Cycnoches* are frequently called, are interesting on account of the peculiar and graceful appearance of the column, which is curved and somewhat resembles the neck of a swan. *C. chlorochilon* is the most easily grown in the genus, and probably the best known. The culture of this species is not difficult. It requires an abundance of heat and moisture while growing and a good rest in a dry atmosphere. For compost good turfy loam and peat in about equal proportions, with a little chopped sphagnum and crock dust, will answer perfectly. A light position should be given the plants. See that no water drops into the hearts of the young growths, sprinkling, on this account, being dangerous. Spring is the most suitable time to repot *Cycnoches*, and after repotting treat as advised for deciduous *Calanthes*.—H. R. R.

NOTES AND COMMENTS.

"A GRAND display." Thus remarked a well-known orchidist to the writer whilst viewing the magnificent spectacle made by these floral gems at the Temple Show last week. It was truly "a grand display," and, considering the cold weather which prevailed for several days prior to the opening of the exhibition, surpassed the expectations of the most sanguine enthusiasts. But, then one has become accustomed to see Orchids at their best on this occasion, and it would have been disappointing if it had been otherwise. It has developed into a rule—to be retained it is hoped with more or less variations.

As mentioned in your report most of the noted growers were represented, some of these having collections of exceedingly choice species and varieties. It was remarked that, so far as quality was concerned, the Orchids this year excelled those shown at previous exhibitions, and, after a very critical inspection, my opinion lays in that direction. Collectively the plants were perhaps no better, but some of the groups contained not only remarkable novelties, but almost priceless floral treasures. These naturally added interest to the display, and would have proved doubly interesting to the numerous visitors had they been aware of the enormous sum of money that the Orchids represented. To the general observer, however, this is a matter of no importance—unless he perchance takes a fancy to a certain plant, and inquires its value.

This, to my knowledge, occurred more than once last week. Like many more, an amateur orchidist, whose name it is not necessary to mention, lingered over a striking *Cypripedium*, exhibited by a well-known firm, admiring the novel and beautiful flower. Knowing a little about the cost of plants he ventured to ask its value of an attendant. The reply came as a startler, "300 guineas." This was sufficient to take away the breath of one whose purse is limited, but on reflection it was remembered that much higher prices have been paid for choice Orchids, in which category the *Cypripedium* under notice deserves a high place. It is, undoubtedly, one of the most interesting and valuable forms in cultivation. To show how highly the owners prize it, I may mention that on the evening of the first day of the Show the plant was taken from London to its home many miles away for the night, and brought to the exhibition again in the morning. On Thursday night it was returned to its home, where, to the disappointment of Friday visitors to the Show, it was presumably thought advisable to keep it.

"Can you give me a rough estimate of the value of the Orchids exhibited in this tent?" observed a visitor to a representative of a firm whose name is known to every enthusiast. "It is impossible to speak for others," he replied; adding, "but so far as we are concerned I can give you an idea as to the approximate value of our Orchids here. We are exhibiting 500 plants, all choice kinds, and taking the whole you can average them at 30 guineas each." This means a sum of upwards of £15,000—a large amount for a group of plants. "In that group, though, there are many rare forms worth thousands of pounds," continued my informant, at the same time pointing to Baron Schröder's collection. This observation induced me to move towards "that group" for the purpose of inspecting these valuable plants.

There was no doubt about the accuracy of the remark above quoted. A superficial glance showed that the best and most costly Orchids had been brought from The Dell, Egham, and those who observed closely saw many rare treasures. *Odontoglossums* were

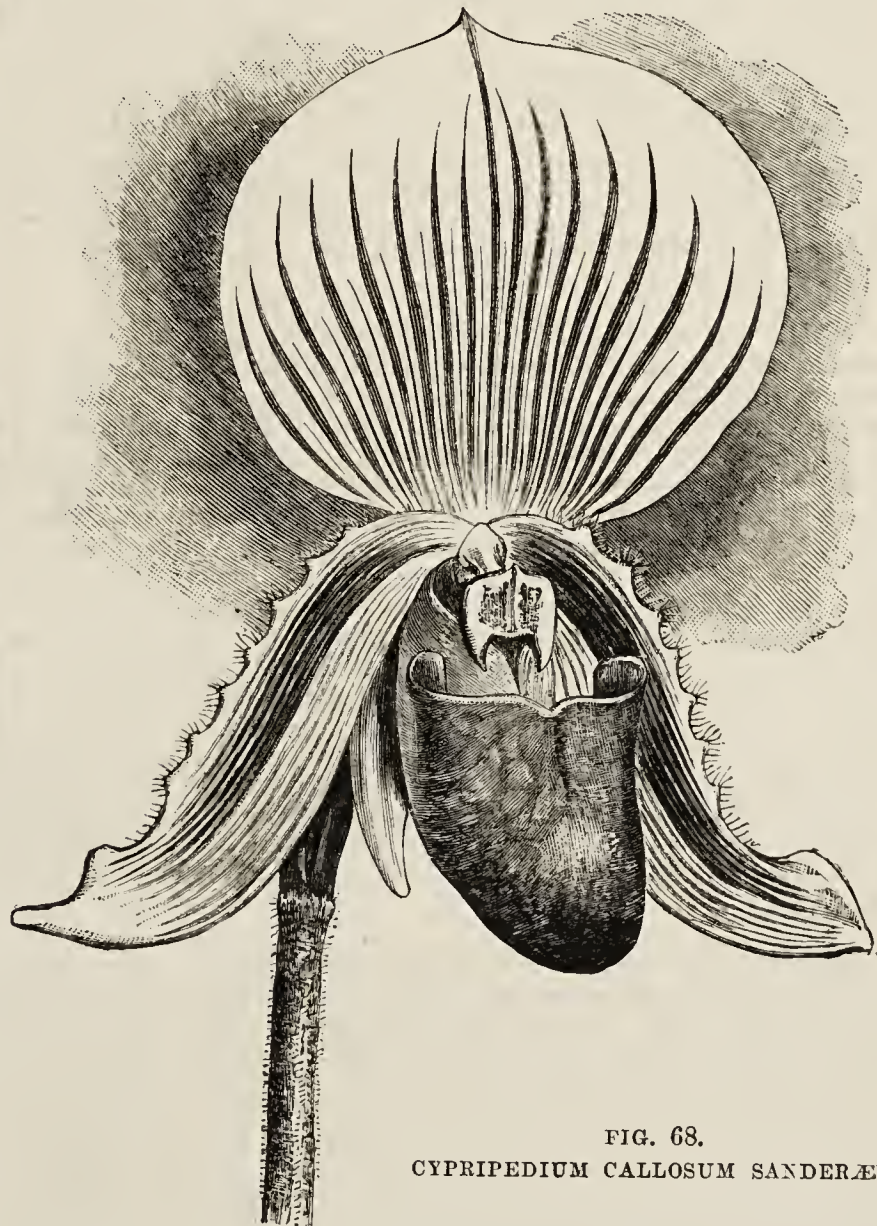


FIG. 68.

CYPRIPEDIUM CALLOSUM SANDERÆ.

particularly fine, these including some beautiful forms. Amongst others the charming *O. crispum* Rex was very conspicuous by reason of its richly marked flowers. These are large in size, and the sepals and petals are characterised by a white margin, and a clear chocolate coloured blotch in the centre of each. *O. crispum* Excelsior was another unusually fine form exhibited on this occasion, the flowers being well marked with rich brown. The same remark applies to *O. c. Wolstenholmiæ*, which like those already mentioned was considered worthy of a first-class certificate. A magnificent variety of *O. Andersonianum*, correctly named superbum, was likewise noticeable in this group. It had a spike bearing thirteen large and richly marked flowers. *O. triumphans*, The Dell variety, which is a distinct form with white at the bases of the petals, and *O. excellens*, carrying twenty-five flowers on one spike, were also well represented. Another of Baron Schröder's choice Orchids is *O. crispum* nobilius, illustrated (fig. 69), on page 430 of this issue.

Standing, as it deserved to do, on a high pedestal, the splendid plant of *Cœlogyne* Dayana was probably noticed by all visitors to the Show. This plant bore twenty-four racemes, these carrying something like 930 flowers. Last year this same specimen, I believe, was exhibited, and it then had twenty racemes, which

carried about 800 blooms. On that occasion it was awarded a first-class certificate and a silver medal, but this year, according to a contemporary, "the Orchid Committee unanimously recommended that a gold medal should be awarded for such progressive good culture." Whether this statement is correct I am not prepared to say, but no record of it appears in the printed official list of awards. Was it inadvertently omitted? On referring to the list whilst writing this paragraph I find no mention of an award being made for Baron Schröder's beautiful collection, other than certificates and awards of merit for individual plants.

With reference to the collection brought by Messrs. F. Sander and Co., of course no one could be disappointed. Like the other groups this one made a beautiful effect, and comprised numerous choice kinds. Apart from such novelties as the white and green *Cypripedium callosum* Sanderæ, the new hybrid *Phaius Owenianus*, both of which were exhibited for the first time, there were others that attracted attention. Among these must be placed the superb specimen of *Oncidium ampliatum majus* that stood out like a beacon. This plant was of huge proportions, and bore, it is said, upwards of 5000 blooms. The flowers were, considering the large number, of a good size and rich in colour. From the same source came *Cattleya Mossiæ Imperialis*, one of the grandest forms in cultivation, and worthy of the first-class certificate awarded for it. The lip of this bloom was very large and richly coloured, being about 2 inches broad, and bright purplish crimson. *Lælio-Cattleya Aylingi* shown by the St. Albans firm was also admired, the same applying to *Cattleya Mendeli picta*, a charming form with fine sepals, petals, and lip.

A visitor to the Exhibition called my attention to the group of Orchids sent by A. H. Smee, Esq., The Grange, Wallington. If less imposing than some of the larger collections this contribution was very effective, and credit is due to Mr. G. W. Cummins, under whose supervision the plants were grown and staged. The many choice forms of *Cattleya Mossiæ* and *Mendeli* which Mr. Smee possesses were here brought to the fore, and arranged with other Orchids made a charming display. *C. Mossiæ Venus*, with its large flowers, each characterised by a richly coloured lip and throat, created quite a sensation amongst a small group of sightseers who were at one time crowded round this collection. The beautiful *C. Mossiæ*, Smee's variety, was also greatly admired, the flowers being exceedingly handsome. A similar remark might be applied to *C. Mendeli*, Alfred Smee, as well as to others not necessary to enumerate here. It may be interesting to repeat what has been recorded in these pages that the majority of Mr. Smee's cool Orchids are placed on trellises over running water outdoors during the summer. In such positions *Masdevallias*, *Odontoglossums* and numerous others of a similar nature flourish amazingly.

Before closing these erratic notes I would like to suggest that a change in the arrangement of the exhibits be made at the Temple Show next year. If the authorities could see their way to accomplish this their efforts would undoubtedly be appreciated by the numerous visitors. When one finds certain groups in precisely the same places year after year matters commence to grow monotonous, and this state of affairs it is advisable to avoid in such a popular Exhibition as that now held annually in the Temple Gardens. With very few exceptions the Orchid exhibitors this year occupied precisely the same sites as they did in 1893. Is it not possible to also vary the method of staging? Circular or semi-circular groups tastefully arranged would be much more effective than long rows of crowded collections on tables. Notwithstanding these defects the Temple Orchids, I may repeat, made "a grand display."—SPECIALIST.

THE NUTRITION OF ROOTS.

It would take an abler pen than mine to explain or define all the physiological facts bearing upon this subject, such I do not attempt. Dr. Maxwell Masters, F.R.S., in his "Life History of Plants," says "That the root proper is an organ of absorption, feeding roots, as most gardeners appropriately term them, and that the essential office of a root is to take up from the soil, or air, or water in which it is growing, sufficient liquid to supply the requirements of the plant, to effect the necessary solution of inert or insoluble matter, and provide for the loss occasioned by evaporation. Solid matters, however fine, cannot be absorbed by the root. What then is absorbed? The answer to this question is water. But how does the water become transferred from the soil into the root? That it does so is beyond question; it is apparent to everyone, and everyone acts on the belief. When it comes to the question how the transfer is effected, then common observation

fails to supply an answer, and we must avail ourselves of the aid of the scientist. From him we learn by what simple, yet none the less wondrous, means the matter is accomplished. The water having an affinity for the cell-membrane, wets it, soaks its constituent particles, elbows them out of the way, if the metaphor may be allowed, and so makes its way through and between them till it gains the interior of the cell, and there diffuses itself amid the denser particles of the fluids within. Water, then, is essential to plants, and to secure an adequate supply of it is the main office of the root."

That cut flowers and foliage when placed in water absorb fluid is indisputable, but the process of absorption by the roots, and that of detached portions of a plant other than the root, is altogether different, according to the statement of Dr. Masters. The former is carried out by the process of capillarity, hence it is always better to detach portions of a plant with a sharp knife if they are to be placed in water, so that the end of the stem may not be ragged, otherwise the process would be interrupted.

The remarks by "A. D." (page 409) on top-dressing is rather a hard nut for the botanist to crack. If the vapour theory is right, then those of us are wrong who believe in putting manure over and not under the roots of our fruit trees, and the propriety of most things in this world are gauged by results. I should certainly like to hear the "theory" expounded. The idea, as I read it, is certainly new to me, but I am always willing to learn.—HEDLEY WARREN.

"A. D.'s" comments (page 408) on "W. R. Raillem's" absorption by vapour theory are mainly sound argument, yet two of his points are misleading. He assumes that parasitical and epiphytal roots do chiefly feed on aerial moisture; to include parasitical plant roots under this head is a mistake. It is well known that they obtain their food (except the carbon) directly from the "host" plant. Again, the term spongiole is now a misnomer, and the theory of absorption by spongioles is definitely exploded. The so-called spongioles are the cellular structure of the root cap, which has an entirely different function to the absorption of food, viz., the protection from injury of the tender growing point of the root. The food enters the plant through the extremely delicate root hairs, situated immediately behind the root cap. These root hairs are in fact vital plant cells containing active protoplasm, having a very thin membranous covering of cellulose.

The functional activity of the protoplasmic cell contents produces an acid sap which keeps the membranous covering in a saturated condition, with the result that the root hairs coming in contact with the insoluble plant food it is by chemical action of the acid rendered soluble. At this stage the physical law of osmosis is set up, so that either Mr. Raillem has failed to grasp the exact process or his botanical authority is at fault, and would stand a poor chance before the South Kensington science examiners when he describes the process as "mechanical decomposition."

The question of plant food and how it is assimilated is too vast a subject to be gone into through a short note like the present one; but if "D. B." (page 410) had studied the comprehensive articles which have appeared from time to time in the *Journal of Horticulture* he would be able to distinguish between the organic and inorganic food of plants, and would see the inappropriateness of talking about the roots of his *Lobelias* devouring the small bones which he had placed at the bottom of the pots.—T. G. W.

It appears to me to be absolutely impossible that plants could live and thrive on vapour. Vapour will not hold the slightest impurity. If it did, how could distilled water—i.e., water chemically pure, be obtained? Let the experiment be tried. Take a bucket of particularly strong liquid manure, stand it in the sun, and place a sheet of glass over it. In due time water will be condensed on the inner surface of the glass, but it will be pure water from Nature's own distillery, and perfectly free from plant food of any kind.—D. GILMOUR.

THE TEMPLE SHOW.

WHILST the grand Exhibition held on the Thames Embankment last week showed in a marked degree the wealth of plants, especially of flowering material, that can be found in this country for the making of a great Show, it also indicated the comparative incapacity of English people to furnish what is to be regarded as a truly artistic and picturesque display. I say comparative, because as compared with the very charming exhibitions furnished so often on the Continent, ours do seem—indeed, are—stiff and formal; but whilst our Continental friends can accomplish so much artistically, it is to be granted that in their employment of the material sent by various exhibitors they have a free hand, such as

never can be conceded in this country. If it be asked, Why not? the reply must be that no British exhibitors would ever consent, once they had staged their exhibits, to have them broken up, carried here and there, and in that way destroying that identity which, so far as exhibits are concerned, all exhibitors prize.

Whilst in so many shows we have to complain of the preponderance of foliage plants, especially of Palms and Ferns, the Temple Show always is excessively floriferous and richly coloured. Were a fair admixture of good foliage plants utilised for toning the excess of bloom, what an immense exhibition would in that way be created. The conditions under which the Show is held absolutely prohibit the introduction of superfluous foliage for the creation of picturesque effect; but the excessive formality of the display is due mainly to the form and nature of the tents, and to the material of which the exhibition is composed, very largely added to by the demands of exhibitors, the majority of whom are voracious in their requirements as to space, and then crowd plants and flowers thickly so as to get into the allotted area as many as possible.

The remedy for this is found in the issue of a schedule specifying the requirements of the various classes, and limiting each exhibit to a defined number as well as to area. The public do not want to see certain things repeated *ad nauseum*. The grasping at space so as to secure cups, medals, or some other awards, just because of the exceeding amount of the material shown, is becoming oppressive, and should be checked. That can only be done by requiring so much of or many of each special subject, thus breaking up into as much diversity as possible the myriads of plants shown which are now crowded into huge groups or lines and command little attention, and excite less admiration. Orchids, Begonias, Ferns, and hardy flowers bewilder by their abundance and indefiniteness. If one-half the material shown at the recent Exhibition had been left at home, and only the best brought, and more widely and pleasingly displayed, how great would have been the gain.

Then with every class put into the schedule, even if the awards be limited to medals and certificates, it should be defined at least what will be the nature of such awards. At the recent Show various persons were appointed to be judges; possibly they made certain awards, but it was impossible for them to do so on any just basis, and as a result collections worth thirds and fourths were adjudged the best. That is a most unsatisfactory method of doing things. If the exhibitor of the moderate collection is delighted, the grower who has a far better one is annoyed. Practically there is in the present method no encouragement to exhibit plants, flowers, vegetables, or fruit of special excellence. I blame no one, because under the present method by which the show is organised, any other course seems difficult if not impossible.

The remedy, as said, is found in the provision of a classified schedule. Then each exhibitor will be limited exactly to the numbers and area asked for and allotted, and he will show absolutely of his best, and that only. The rivalry induced by the existing system is also very expensive for exhibitors. They have to employ more conveyances than otherwise would be needed, also more labour; in fact the pecuniary burden is thus made very heavy, and their efforts in helping to make a grand show under these conditions are worthy of the warmest appreciation. Still they would gain much by limits and restrictions, so also would the show, especially in having less formality and greater interest; and the public would gain also, because they would see less of mediocrity, and far more of the higher excellence which can be displayed when it is encouraged. The Temple Show is now a great London institution, and needs very careful handling. If for one year, because as suggested a great international show should divert it elsewhere, at least that would be but a temporary break. More ground than is now covered cannot be possibly furnished, and if it be less there will be no cause whatever for regret, if that less means, as is much to be desired, higher average excellence.—D.

NOTES ON GLADIOLI.

THERE are at least two of the remarks made by "D., Deal," on page 358 which call for a note. He appears to think that the corms sold by Scotch nurserymen are grown in Scotland. There may be, perhaps, two trade growers who sell some corms of their own growing, but they are nearly all imported; indeed nurserymen make no secret of the fact, but on the contrary are anxious their customers should know that their stocks are grown abroad. No one can compete on equal terms with home-grown corms against imported. Even for ordinary decorative purposes it is impossible to keep for any lengthened period a collection of Gladioli, unless they are grown in the manner indicated in my article. They must have a longer season of growth than can be secured by planting

unstarted corms in the open ground, and due care taken to lift and ripen the corms as early in the autumn as cessation of growth will allow. Inattention to these details results in the necessity of annual purchasing.

With regard to Lemoine's hybrids, your correspondent is surely labouring under a misapprehension as to their not being distributed as "hardy." I made the first purchase of these from an English firm, and bought them as being hardy. But M. Lemoine himself, though he recommends a winter mulch, says most distinctly that they are hardy, and indeed the title of his brochure, published in 1890, is "Les Glaioul Hybrides Rustiques." Of *G. purpureo-auratus* it is there stated: "Le *G. purpureo-auratus* est parfaitement rustique." Of *G. Lemoinei* and Marie Lemoine he says: "Elles étaient rustiques, et pourraient, sans le moindre danger, passer l'hiver en pleine terre."

I can well believe, however, that though the winters of middle France are characterised by a greater intensity of cold than is the rule either in England or Scotland, the greater heat of the summer and the more arid atmosphere during the winter make a difference all in favour of France.

As an illustration of what an effect a hot summer has on vegetation, I may note that some spare plants of Arum Lilies left in the open ground have passed the last severe winter safely and are now making leaves. I have never known them to do so previously. As to preferring the older to the newer sorts of Lemoine's Gladioli, I of course do so entirely from a decorative point of view.—R. P. BROTHERSTON.



CHRYSANTHEMUMS IN JAPAN.

(Concluded from page 412.)

ANOTHER book which contains some matter of interest on Chrysanthemums in the land of the rising sun is Mr. F. T. Piggott's, "The Garden of Japan." This is a year's record month by month of the leading floral features of that country. The chapter November begins with a quotation in use when the Chrysanthemum is drunk in saké during the Festival of Happiness, and this custom is supposed by the drinkers to avert evil during the ensuing year. As a specimen of Japanese loyalty to the imperial house it is worthy of reproduction. It says, "Let the Emperor live for ever. May he see the Chrysanthemum cup go round autumn after autumn for a thousand years." Fuller particulars of this grand floral fête can be found in Bowes and Audsley's "Keramic Art of Japan," but as that does not pretend to be a horticultural book it is not for present purposes needful to do more than mention the fact. Mr. Piggott tells us he is not at all sure that we do not see a finer exhibition in the Temple Gardens every autumn, so far as size and colour go, than even in the Palace Gardens of the Emperor, but from photographs sent me some years since I am disposed to think that Mr. Piggott's high estimate of the Temple productions proclaims him to be anything but a connoisseur in Chrysanthemum matters.

There are in these photographs some wonderful triumphs in cultural skill both as regards trained plants and single stem specimens. Pierre Loti in his "Japoneries d'Automne" specially alludes to the Emperor's Chrysanthemums as marvels of the Japanese gardener's art, and from other sources we may justly conclude that the cultivation of this flower is as well understood in Japan as anywhere at home. Another method of culture much in vogue in the East is grafting a large number of varieties on one stem. This is called "Odsukuri," or great bloomer method, and it is not unusual to find from fifty to 150 sorts all blooming on a single stock. The building up of models, either life-sized or colossal, sometimes representing human figures or divinities, occasionally historical or classical scenes, but all composed of living plants of Chrysanthemums in full bloom, is another device of those ingenious people, but we are already familiar to some extent with this curious practice through the writings of the late Mr. Fortune. Whatever may be the estimate of the capabilities of Chrysanthemum growers in Japan it may be useful to point out that Mr. Comley of Boston, U.S.A., when relating in the Transactions of the Massachusetts Horticultural Society his experiences in Chrysanthemum collecting in Japan, and he procured 400 varieties unlike anything grown in America, says most distinctly that long as he has known the Chrysanthemum he never knew what it was until he went to Japan. This seems to be a pretty good testimony in favour of the Japanese grower, and if Mr. Comley's experiences were supplemented by a visit to some of our leading exhibitions it would probably render them complete and his verdict would be unquestionable.

Personal nomenclature in Japan appears as yet to be unknown, and a good thing too. Most of the names are poetical and imaginative where translations can be obtained. Some of those applied to recent seedlings are interesting from this point of view, and as examples I will quote

Lion in Play, Moon in Frosty Night, Torch in Snow, Snow on Pine, Lion's Head, Cascade of a Thousand Fathoms, Cherry on the Peak, Companion of the Moon, Waves in the Morning Sun, Moon's Halo, Golden Dew, and Shadows of the Evening Sun.

I now turn to another work, a recent acquisition, but a very beautiful one. It is called "The Flowers of Japan, and the Art of Floral Arrangement," by Josiah Conder, printed and published at Tokio. Chrysanthemums only form a small portion of this book, but as may be expected of every book dealing with flowers in Japan, there is something instructive and interesting to be found about them in it. Under the heading of Autumn Flowers the Chrysanthemum occupies the premier position, and a few words from Mr. Conder may very well be quoted. He says, "It seems that the wild Chrysanthemum, of small flower, has always been indigenous to Japan, and held in considerable repute for medicinal purposes, in which connection early records state that large quantities of the yellow flower were yearly sent to the Imperial Court from the southern provinces. The large cultivated flower, however, is said to have been imported from Corea or China, and first planted at Ha Kata in the province of Chikwzen. At this time five colours were known, described as blue, yellow, red, white, and black, probably "referring to a dark purple colour." Mr. Conder, perhaps without knowing the importance of it, revives again the old story of the mythical blue variety, which, so far as most of us are concerned, was relegated to oblivion as one of those things that never had been, and never would be.

The Kiku, which is the Japanese name for Chrysanthemum, and probably for other species than our well known exhibition favourite, has always been much honoured by the Imperial Court, and the annual fête in the Emperor's gardens is known almost as well by name here as any important gathering of the kind in England. But like most things in the East nothing is popular unless it be ancient, and so we learn that as early as the time of the Emperor Heizei in the ninth century garden parties were held in the Palace Gardens to do honour to the flower that still continues to attract all the nobility of the country and distinguished foreign visitors at the season of its flowering in modern times.

At the display in 1891 Mr. Conder says that there were 160 varieties on view, but that number, which perhaps comprises only the best in the country, is in no way surprising. He adds, speaking on this subject, that there are said to be in Japan 269 colour varieties of the Chrysanthemum, of which sixty-three are yellow, eighty-seven white, thirty-two purple, thirty red, thirty-one pale pink, twelve russet, and fourteen of mixed colours. I confess to feeling disappointed at this enumeration because I almost hoped to see at least one blue. A fancy prevails that in this flower the same tint is never exactly reproduced, and that in this it resembles the endless variety of the human countenance.

Some of the old botanical travellers have told us of Chrysanthemums being grown in Japan all the year round. We are able by a very exhaustive table of flowers, arranged according to their months, to test this matter, for Mr. Conder gives us the Japanese name, the botanical name, and the English popular name, and an extract from it relating to the Chrysanthemum will show the precise value to be attached to the statements referred to.

Kan-giku	Pyrethrum sinense	...	...	Winter Chrysanthemum	(Feb.)
Haro-giku	Chrysanthemum coronarium	...	...	Spring ditto	...
Korai-giku	...	...	...	Corean ditto	...
Haro-giku	C. coronarium	...	...	Spring ditto	...
Korai-giku	...	...	...	Corean ditto	...
Kiku	C. coronarium	...	...	Chrysanthemum	(May)
di to	ditto	...	...	ditto	(June)
ditto	ditto	...	...	ditto	(July)
ditto	ditto	...	...	ditto	...
Riukiu-giku	...	...	...	ditto	(Aug.)
Kiku	Chrysanthemum coronarium	...	...	ditto	...
No giku	...	...	...	Wild Chrysanthemum	(Sep.)
Hama-giku	Chrysanthemum nipponicum	...	...	ditto	...
Riukiu-giku	...	...	...	Chrysanthemum	...
Kiku	C. coronarium	...	...	ditto	...
Hama-giku	C. nipponicum	...	...	ditto	(Oct.)
Zan giku	...	...	...	Late Chrysanthemum	...
Kan-giku	Pyrethrum sinense	...	...	Winter ditto	(Nov.)
Kan-giku	...	...	...	Winter ditto	(Dec.)
Kan-giku	...	...	...	ditto	(Jan.)

There are seven flowers which the Japanese regard as suitable for felicitous occasions, and of these the Kiku takes the first place. In most cases Mr. Conder tells us the white species of every flower takes highest rank, but there are exceptions to the rule. The yellow Chrysanthemum takes precedence of those of any other colour, a distinction borrowed probably from the Chinese, because I find in an old Chinese book called "The Flower Mirror or Lessons in Horticulture," by Ch'eng Fu-iao of Hu-nan, published in 1783, a statement to the effect that spring, summer, autumn, and winter all have their Chrysanthemums, but only those that flower in autumn are regarded as the proper flower, and of these yellow is the colour most esteemed. This Chinese author supplies a descriptive list of varieties grown in his country 111 years ago, and I notice the list of yellow varieties which comes first contains fifty-four varieties, white comes next with thirty-two, then we have red varieties to the number of forty-one, and purple with

twenty-seven. But I only intended to speak about Chrysanthemums in Japan, and as I am drifting off to China it may be wise to draw this already too lengthy piece of gossip to a close.—C. HARMAN PAYNE.

CHRYSANTHEMUM SHOW AT AUCKLAND, NEW ZEALAND.

THE annual show of the Auckland Chrysanthemum Society, affiliated with the N.C.S., took place on April 19th, 20th, and 21st at the Choral Hall, which was, as usual, decorated very tastefully with evergreens and grasses. There were the usual extensive exhibits of bouquets, hand baskets, and table decorations. His Excellency the Earl of Glasgow was unable to open the show, having only just returned from a protracted visit to the Pacific Islands, but Lady Glasgow and party visited the Hall on the second day, and were conducted through by the members of the Committee.

The season was a late one, the incurved blooms therefore were not up to the mark, the "Queens" in many instances showing lack of development. The best incurved blooms were Prince Alfred, Lord Wolseley, Jardin des Plantes, Jeanne d'Arc, Nil Desperandum, White and Pink Venus, and Antonelli, which always comes splendid here. Strangely enough not a single bloom of the Princess of Wales family was staged, the fungus having been particularly hard on this class during the present season.

The champion of the show was Mr. Tom Whiteley of Otahuhu. He exhibited an excellent thirty-six (eighteen incurved and eighteen Japanese). His Japanese were:—Back row: Vivian Morel, Thunberg, W. Tricker, Domination (grand), Sunflower, E. Molyneux. Middle row: Conder, Gloire du Rocher, Comte de Germiny, R. C. Kingston, Lady T. Lawrence, Ada Spaulding. Front row: Mrs. A. T. Duxel, Grandiflorum, Mrs. Fottler, Stanstead White, Mrs. F. Jameson, and Mrs. Langtry. Mr. Wells' twelve Japanese consisted of Vivian Morel, Domination, W. Tricker, International, Sunflower, Anna Hartshorn, King's Daughter, Rohallion (very fine), A. H. Neve, Col. W. B. Smith, W. Falconer, and Cesare Costa.

In the amateur classes Mr. T. Wells of Waikato gained first prize for twenty-four Japanese blooms. Among his best were Vivian Morel, Rohallion, Bertha Flight, W. Tricker, Puritan, Anna Hartshorn. Mr. Handly was second with good blooms of Sunflower, Vivian Morel, Mrs. Fottler, Madame C. Audiguier, Elaine, and Col. W. B. Smith. The bloom of Elaine is the first that has been seen for several years past.

The competition for six Japanese of one variety brought out a large number of stands. Mr. Wells was first again, and with the same variety as last year, a yellow Japanese of exquisite form, the florets being strangely twisted and interlaced. The variety was imported several years back from San Francisco by Mr. J. W. Tibbs, who has never been able to ascertain the name of this beauty. Mr. Tibbs was second to Mr. Wells with a fine stand of Excelsior, Mr. Wells running him close for second place with six magnificent Col. W. B. Smith. The show was inferior to the last in the number of blooms, but in quality far surpassed former exhibitions.—J. W. T.

[We are very much obliged indeed to our correspondent. It is perhaps noteworthy that two letters opened consecutively last Thursday morning were both from New Zealand—one on Roses, the other on Chrysanthemums. We are always glad to hear from floral friends on the "other side," and their communications are always welcome in the old country.]

THE LAW ON SELLING UNSOUND FRUIT.

ON Monday morning last, in a Court consisting of Justices Hawkins, Mathew, Cave, Grantham, Charles, Vaughan Williams, Lawrence, Wright, Collins, Bruce, and Kennedy, a considered judgment was given in the case of the Queen v. Dennis. The case had reference to the prosecution of an English and foreign fruit broker in Covent Garden Market for an alleged offence under the Public Health (London) Act in selling Grenoble Walnuts to a hawker, some of which were unfit for human food. The defendant denied liability, on the ground principally that he had exhibited a printed notice on his premises informing all buyers of fruit that he sold on the express condition that they should sort all goods bought by them and separate the sound portion from the unsound. The case was tried before Mr. Warry, Deputy Chairman of the South London Sessions, and the Chairman left to the jury to convict the defendant unless he proved that he had reason to believe the Walnuts to be good. The jury convicted the defendant, and the Chairman stated a case in which it was said that it was the practice of foreign fruit brokers to sell foreign fruit in the original packages without examination except by opening one or more samples.

Mr. Justice Kennedy was the first to deliver judgment. He said he was of opinion that the conviction in this case could not be sustained, because under the statute the article found in the possession of the purchaser must be an article liable to be seized. The facts of the case showed that the Walnuts were not sold or put into a place for sale as the food of man, and so they did not constitute an article liable to be seized. A jury might not improperly find that the sound Walnuts only were bought and intended as the food of man, and that the unsound ones were not purchased as the food of man, but were intended for destruction. Mr. Justice Bruce concurred. Justice Charles and Lawrence stated that they agreed with the judgment to be delivered by Mr. Justice Hawkins in favour of the conviction being quashed.

Mr. Justice Hawkins said that in his opinion there were four reasons why the conviction could not be sustained:—First, the Walnuts were never liable to be seized, because defendant never intended these

Walnuts for human food; secondly, if he had intended them for human food they were not found in his possession; thirdly, they were never purchased as good ones; and fourthly, if purchased they were never purchased for the food of man. Mr. Justice Cave concurred.

Mr. Justice Mathew, in dissenting, said that he was of opinion that the notice exhibited by the appellant did not relieve him of the responsibility imposed upon him by the Act, and he thought that the conviction was right and ought to be affirmed. The conviction was quashed, and the responsibility attaching to the sale of unsound fruit attaches to retail vendors who dispose of the produce direct to consumers.



THE WEATHER IN LONDON.—Since publishing our last issue several changes in the weather have taken place. Towards the end of the week it turned quite mild, Thursday and Friday being very warm. On Saturday, however, the wind veered to the north-east again, and hailstorms were frequent on Sunday, a slight frost occurring at night. Monday and Tuesday were rather cold and showery, with local hailstorms, but Wednesday opened fine and milder, though showers fell during the day.

— THE GARDENERS' ROYAL BENEVOLENT INSTITUTION.—In our advertising columns we publish a gratifying list of subscriptions in view of the fifty-fifth annual festival dinner in aid of this excellent charity, which will take place at the Hotel Métropole on Thursday evening, June 21st, under the presidency of Sir Julian Goldsmid, Bart., M.P. Mr. G. J. Ingram, 50, Parliament Street, S.W., will be glad to acknowledge further contributions, and add them to the Chairman's list.

— THE NURSERY AND SEED TRADE ASSOCIATION.—The annual dinner of the members of this useful Association took place at the Guildhall Tavern on Wednesday evening, the 23rd inst., the President, N. N. Sherwood, Esq., occupying the chair. About thirty members attended and enjoyed the excellent speeches and music of the evening. The Association numbers 146 members. The number of debts applied for during the past year was 1217, and the amount recovered was £6264 5s. 2d. Of this sum £2138 18s. 9d. was collected by the Association, and £4125 6s. 5d. by its Solicitor. The amount is the largest sum recovered for members since the resuscitation of the Association in 1885. Mr. G. Worrell, 30, Wood Street, Cheapside, is the secretary, and Mr. Charles Butcher solicitor to the Association.

— BIRMINGHAM AMATEUR GARDENERS' ASSOCIATION.—The second annual excursion will take place on Saturday, June 9th, the destination being Alcester, permission having been obtained from the Marquis of Hertford to visit the grounds and gardens of Ragley Hall. The head gardener, Mr. Christie, has kindly offered to conduct the party through the various departments. The tickets are 3s. 6d. each, and members have the privilege of bringing friends. The party will leave Birmingham by the 2.15 P.M. train, and immediately on arrival at Alcester will go to Ragley, concluding with a meat tea, to be provided at the Swan Hotel, Alcester. Applications for tickets should be made at once to the Hon. Secretary, W. B. Griffin, Wychbury, Alcester Road, Moseley.

— A FRUIT TREE PEST IN CORNWALL.—A western daily contemporary says—"The fruit growers in East Cornwall are anxious concerning the presence of a peculiar insect in their gardens, known by the name of 'Touch-up,' which attacks the foliage of the larger trees, more especially the Cherry and Plum, thereby reducing the fruit-bearing power of the tree to a minimum. The appetite of this insect is remarkable, a few of them being quite equal to the task of stripping an orchard of trees of every vestige of leaf within a very short space of time. How to get rid of them is a problem difficult to solve; meanwhile, the insect is working havoc in the gardens, to the great dismay of those who are depending on the culture of fruit for a livelihood. Apart from the pressure of the 'Touch-up,' the prospect is decidedly in favour of the fruit grower, the small fruit, such as Gooseberries, being very abundant. The Apple crop will not be so heavy as last year, but if this insect pest can be overcome the Plum and stone fruit generally will be equal to the bearing of last year."

— EARLY STRAWBERRIES.—We learn from a western daily contemporary that Mr. J. H. Nicholls, of Tangier, Lostwithiel, picked some ripe Strawberries grown in the open in his garden on Thursday, the 24th inst.

— GROS MAROC GRAPE.—The Gros Maroc Vines (page 413) in my vinery are conspicuous for their robust and healthy growth and for the abundant crops of fruit they produce, also for their freedom from mildew and shanking. I have never known them suffer from these diseases. They are on their own roots, not grafted.—T. FRANCIS RIVERS.

— FERN-LEAF PARSLEY.—I saw a splendid strain of this charming Parsley at the Bedford Seed Grounds recently. It is one of the features of this variety that whilst the leafage is so finely lacinated and is so graceful it is also of such a deep green hue, when a good stock is had as in the present case, there can be hardly found a more pleasing or serviceable Parsley.—VISITOR.

— DEATH OF MR. W. C. BREWIN.—It is with deep regret that I have to inform you of the loss sustained by Mr. C. M. Brewin, of the Nurseries, Bawtry, Yorks, in the death of his only son, W. C. Brewin, who died suddenly after five days' illness at the age of twenty-seven years. The firm will be carried on as usual under the same name of Brewin & Son.—THOMAS YODAN.

— MESSRS. W. & G. DROVER, FAREHAM, inform us they had the honour of making the bouquet which was presented to Her Royal Highness the Princess of Battenburg on the occasion of opening the fancy bazaar at the Town Hall, Portsmouth, recently. Mr. W. Drover was presented to Her Royal Highness, who congratulated him on the artistic manner displayed in arranging the bouquet.

— MISS NORTH'S GALLERY OF FLOWER PORTRAITS in Kew Gardens has, says "Nature," been reopened to the public, the pictures having undergone a thorough inspection and varnishing, under the advice of the President of the Royal Academy. A bust of Miss North has been placed in the North Gallery at Kew. The bust, the work of Mr. Conrad Dressler, has been presented by Mrs. Addington Symonds.

— PAPAVER UMBROSUM.—A long dense row of this brilliant Poppy was last week a most effective object at Bedford. Seed sown early in the autumn beneath a west wall give strong plants to bloom profusely. This, too, is the way to treat the beautiful Shirley Poppies, of which we hear so very little now, yet produce flowers of such exquisite hues. Both forms of these Poppies may be sown in the spring; but from autumn sowings the plants being duly thinned, the bloom produce is greatly superior in every way.—D.

— PRESENTATION TO MR. AND MRS. IGGULDEN.—On leaving Marston, after a residence of thirteen years, Mr. and Mrs. Iggulden were the recipients of gratifying testimony of the respect in which they are held in the neighbourhood. On Thursday evening last, at a concert in the Marston Schoolroom, the most important part of the proceedings was the presentation of a beautifully executed illuminated address, (containing a hundred signatures), the work of Mr. Sidney Crees, together with a handsome gold keyless lever watch, bearing the recipient's monogram at the back, with the inscription inside: "Presented to Mr. W. Iggulden by his friends at Marston, May, 1894," also of a chaste silver tea service to Mrs. Iggulden. The presentation was made by the Rector, the Rev. Prebendary Harford, who, in the course of an admirable address, remarked, "A walk round Marston Gardens under Mr. Iggulden's guidance has been a pleasure to many, for he likes to talk about his flowers with those who are fond of them and wish to know more about their culture, and he is wont to tell all he knows which will be most useful in a very kind and pleasant way. Some of us, I expect, and I confess that I am one, wish now that we had tried 'to pick his brains' more cleverly and frequently than we did now he is leaving Marston. He is also an acknowledged expert in the culture of fruit trees, and has been most successful in their culture, and, I believe, in Bedfordshire he is about to carry out a series of experiments which may prove useful to the public in the future. Mr. Iggulden also illustrates the saying of the wise man, 'that those who wish to have friends must show themselves friendly.'" The gifts were appropriately acknowledged, and a pleasant musical evening spent by the assemblage. Mr. Iggulden commences his duties as manager of the Duke of Bedford's Fruit Experimental Station at Ridgmount, on the Woburn Estate, on the 1st prox., and there cannot be a doubt that he will be equal to all that can be required of him in the practical conduct of an extensive undertaking of an important educational character.

— *MESEMBRYANTHEMUM CORDIFOLIUM VARIEGATUM*.—"E. K." observes:—"What's in a name? Surely in this a stumblingblock over which many persons trip. 'Miss who? Please say it again,' a visitor asked when looking at the carpet beds. Unfortunate plant, thou canst not be mentioned without thy whole character being exposed in that Latin conglomeration. We cannot call thee miss, nor mess, nor shalt thou usurp the title of mum. Unhappy child of Nature; better for us hadst thou never been born."

— *NEMESIA STRUMOSA SUTTONI*.—An interesting fact in relation to the hardness of this most beautiful annual was mentioned to me at the Temple Show. Speaking of what harm had been done in his locality by the frosts, Mr. Mortimer, Farnham, said, "Singularly a big breadth of the *Nemesia* which I had just previously planted out is absolutely uninjured." That is so much the more interesting, because this annual comes to us from the Cape, though possibly from elevated regions.—D.

— FROSTED RUNNER BEANS.—I do not know what may be the fortune generally of all who sowed their Runner Beans rather too early, but I observed at the Richmond allotments few that were above ground before the frost but had their cotyledons destroyed, whilst the lower portions of the stems remained unharmed. A plant carefully lifted showed the base buds on each side had already begun to push growth. Thus there is good reason to hope that in a few days the harm done by the frost may be dissipated by the strong growths now taking place.—D.

— SHIRLEY AND DISTRICT GARDENERS' AND AMATEURS' ASSOCIATION.—The monthly meeting of above Society was held on Monday, the 21st inst., Mr. B. Ladhams, F.R.H.S., presiding. An interesting and instructive discussion on "Insects Injurious to Garden Crops" was opened by Mr. E. J. Wilcox, gardener to Col. W. S. Sinkins, Aldermoor. Mr. Wilcox illustrated his remarks with a large collection of insects, and the best methods of minimising their ravages were freely discussed. Mr. Wilcox stated that he had a most promising crop of Gooseberries ruined by ants, which swarmed up the bushes and destroyed the organs of the flowers, causing the fruit to shrivel and fall off. A hearty vote of thanks was accorded to the lecturer. Several new members were elected, and it was announced that the subject for June would be a lecture by Mr. W. F. Perkins, Portswood, on "The Composition of Chemical Manures, and the Limit to Their Economical Use in the Garden."

— FORESTRY. — Mr. W. R. Fisher writes to "The Times" deploring the condition of forestry in this country. He says:—"We have scarcely any professional foresters in the British Isles capable of managing a forest of 5000 acres, while numbers of amateurs, whose opinions are devoid of authority, are always ready with advice about forest management. Things are managed differently abroad. In France the men charged with the control of the State and Communal forests, after receiving a good general education, spend two years at the Agricultural Institute of France, and are then selected from the first dozen men out of about 200, who qualify annually for certificates. They then study for two years at the State Forest School of Nancy, and in the State forests of the North of France and in the Vosges and Jura mountains, before they obtain charge of any forests in France or its colonies. There are at least a dozen forest schools in Germany and Austria, and the Esterhazy family actually maintain a forest school of their own, where they train the numerous foresters required for their vast forest property. Italy, Russia, Spain, and Holland also maintain national forest schools. This consensus of opinion in Europe in favour of professional forest training should convince us as to its necessity, and the more so that foreign forest officers who have seen English forests can only wonder at their extraordinary condition and treatment. Worse than this, if our colonies wish to secure foresters, they must perforce go to France or Germany, as they have done for the Cape of Good Hope, Natal, and Cyprus. The Indian Government, which gets a large revenue from its forests and appreciates their climatic value, and the great material assistance they afford to agriculture, has for the last twenty-five years arranged for the suitable training of its foresters, both in England and in India. The candidates for the Indian Forest Service who are selected at home spend about six months of their two and three-quarter years' training in Continental forests, as there are no suitable forests in the United Kingdom where they could learn their professional duties, nor are sufficient steps being taken to secure such areas of instructive forests for the future, although no country is more favourably situated than our own for vigorous forest growth. I am just now obliged to send a young Englishman, selected for the forest service in Mysore, to Switzerland to learn practical forestry."

— THE KEW BULLETIN.—We have received a copy of "The Kew Bulletin" for May, which as usual contains much useful information. There are articles on the "Flora of Aldabra Islands," "Cultivation of Coca in India," "Sugar-cane Disease," "New Orchids," "Agricultural Progress in Jamaica," "Coffee Cultivation in Angola," and some miscellaneous notes, from which we extract the following four paragraphs.

— *LATHYRUS TUBEROSUS* TUBERS.—The Museum of the Royal Gardens, Kew, is indebted to Messrs. Veitch & Sons of the Royal Exotic Nursery, Chelsea, for a good sample of the tuberous roots of *Lathyrus tuberosus*, L., a leguminous plant found in cornfields in several parts of Europe, and in this country in the county of Essex. The sample was accompanied by a memorandum from Mr. C. J. Barenburg of Arnheim, Holland, from which the following particulars are derived. The plant thrives well in Austria, Switzerland, and the greater part of France. In Holland it is found chiefly in the provinces of Guelder, Utrecht, Overysel, and Zealand, in the first three of which it grows wild, and the farmers do their utmost to extirpate it in consequence of its being very injurious to Wheat and Rye crops, exhausting the soil and clinging in its growth to the haulms. It is often so abundant as to make the cornfields quite bright with its flowers. In Zealand the plant is cultivated for the sake of the tuberous roots, either by leaving the smaller ones in the ground, when the larger ones are being dug up in the autumn, or by sowing the seeds saved in March. The fresh tubers are outwardly of a blackish colour, and inwardly of a whitish fleshy texture. When cooked they are said to be very wholesome food, and to have a flavour similar to a Chestnut. To prepare them for food they should be first put into a bucket filled with water and rubbed with a piece of wood to remove the clay or soil and loosen the skin. They are then ready for boiling with the skin on in water; a handful of salt should be added to a quantity contained in an average sized pot. They require boiling for two hours or more, and when ready they are peeled and eaten with a little butter. In France, children of the lower class eat the raw tubers, simply removing the skin before doing so.

— PLANTS IN TROPICAL AFRICA.—The Germans are very active in collecting plants in tropical Africa, and the Herbarium has received considerable additions from these sources. Among them a set of about 1000 species collected by Mr. C. Holst, in the Usambara country, in East Africa, situated in about the same latitude as Pemba Island. This collection was acquired by purchase, and contains a large number of new species, especially of trees and shrubs. Noteworthy among the new herbaceous plants are some new species of *Streptocarpus*. From the Cameroons we have a collection, also rich in novelties, collected by Dr. Preuss, and presented by Dr. A. Engler, the Director of the Royal Botanic Garden, Berlin. There are several new genera, including a remarkable one belonging to the *Aurantiaceæ*.

— PRESENTATION TO THE LIBRARY AT KEW.—Miss Catherine Sharpe of the Grove, Hampstead, has presented a copy of the thirteenth edition of Linnaeus's "Systema Naturæ." This is not the genuine corrected thirteenth edition, edited by Gmelin, but one printed at Vienna in 1770, and a mere copy of the twelfth. It is on the same footing as the so-called third edition of Linnaeus's "Species Plantarum," also printed at Vienna.

— ARTIFICIAL PRODUCTION OF MUSHROOM SPAWN.—In an interesting pamphlet, entitled "Sur un nouveau procédé de culture du Champignon de couche," MM. J. Costantin and L. Matruchot describe a method, first published by them in the "Comptes rendus," for July 3rd, 1893, by which the spawn of the edible Mushroom can be produced in a state of purity wholesale. The pure spores are collected and sown in a special sterilised nutrient solution, where they germinate and form a pure white mycelium arranged in strands. This mycelium is placed on sterilised manure, where it grows abundantly for some weeks. At this stage it has the appearance and odour characteristic of natural spawn, and when placed in a Mushroom bed grows and produces Mushrooms normally. I. The Production of a Pure Spawn or Mycelium.—At present cultivated Mushrooms are subject to several diseases, the germs of which are introduced along with the spawn. II. Choice of Varieties.—Certain varieties, especially the one having the cap entirely white, are most esteemed in the market. By the method described, it is practicable to perpetuate any desired variety in a pure state, a condition not possible by any other means. III. Permanent Production of Spawn.—At present the production of spawn is intermittent; by the culture process spawn can be produced throughout the year, which is an obvious advantage. The authorities hope to apply the same method to the cultivation of other edible species, as the *Boletus* and *Morel*.

— DIANTHUS CALLIZONUS.—This beautiful Pink, which, I believe, was illustrated in the *Journal of Horticulture* some months since, is now in flower at Kew. The flowers are of a rich rose colour, relieved by a conspicuous zone in the centre. The plant is strong in growth, and likes a well-drained rich soil.—VISITOR.

— TEA GROWING IN INDIA.—Tea growing has become an important and rapidly increasing industry in India and Ceylon. The Indian crop for 1893 was the largest ever produced there, exceeding by twelve million pounds that of the preceding year. The total crop of Ceylon was larger by eight million pounds than that of 1892, the combined crops supplying an increase of twenty million pounds over any previous crop.

— A PICTURESQUE RAILWAY EMBANKMENT.—“E. D. S.” writes:—“I have never seen a prettier sight than is now presented by a stretch of railway embankment not many hundred yards from the Gravesend station of the South-Eastern Railway Company when approaching from Northfleet. It is not, however, the railway traveller who can enjoy the beauty of the bank in question but the on-looker from the bridge in Lennox Road. There can be seen on the bank facing the south a mass of Valerian in bloom, pink and red shades of this beautiful wild flower making a most effective display, which will more or less continue all the summer. There is said to be a white variety, but this I have not seen. Your esteemed correspondent ‘J. R. S. C.’ who is acquainted with this spot, and others worth seeing for miles around, will doubtless know whether there is a white variety or not. I may say I was much interested in this flower in the autumn when the last few heads of bloom were appearing, but could not find its name until I read an interesting article by ‘J. R. S. C.’ in a local publication, entitled ‘Wild Flowers around Gravesend.’ Between Lennox Road and the station another bridge crosses the line, and from that a further stretch of embankment can be viewed, where overhanging bushes of white Hawthorn make a rich contrast with the coloured Valerian. The Valerian loves the sunshine, as upon the northern embankment little is to be seen. It seems to revel in the chalk, but I think it will grow without it, as I once saw a splendid clump in flower in South Yorkshire.”

— CABBAGES.—This is most emphatically the season of the Cabbage. Generally we have few hardy vegetables that are at this time of the year so plentiful, so easily obtained, and so useful. But in spite of the great numbers of varieties in commerce it is most evident that we have far too many coarse late varieties, which it would be better for gardening did they disappear altogether. If we could reduce our stocks to some half dozen, and those only that were of smallish or medium size, carrying very little superfluous leafage, and having solid, neat, compact hearts, how great would be the gain. A few days since, looking over the allotments at Richmond, I found out of probably 150 beds or plots of Cabbages only one really good stock. It was, perhaps, the Rainham or Early Offenheim, but whatever it was, a better Cabbage for hearting in and of good medium size could not have been found. Whilst many had little better than clusters of leaves to cut, these firm solid hearts must have been delicious when cooked. In one case a breadth of Cabbage of a very coarse leafy kind was shown me as Ellam’s Early. The grower had been shamefully deceived, and I fear many others had been so likewise. If private gardeners, and especially market gardeners, can get so well served, why not allotment holders? If we could always secure a correct stock of Ellam’s Early, Early Gem, Little Pixie, Early York, Early Rainham, or Early Offenheim, some large, and all fairly early, we should want none others. Just now at the shops what are being sold as Cabbages are not much better than clusters of coarse leaves. I saw some good Ellam’s on sale a short time since, but presumably all those have been cleared off. It is no credit to our Cabbage raisers that we have not an abundance of good hearts at the end of May.—A. D.

— ROYAL METEOROLOGICAL SOCIETY.—The monthly meeting of this Society was held recently at Westminster, Mr. R. Inwards F.R.A.S., President, in the chair. Mr. W. Ellis, F.R.S., read a paper “On the Relative Frequency of Different Velocities of Wind,” in which he discussed the anemometer records of the Greenwich Observatory for the five years 1888-1892, with the view of ascertaining the number of hours during which the wind blew with each of the different hourly velocities experienced during the period. The results of this discussion show that the wind blew for the greatest number of hours with the hourly velocities of ten and eleven miles. Mr. W. Marriott, F.R.Met.Soc., gave an account of a series of observations on the

“Audibility of ‘Big Ben,’ at West Norwood,” which he had carried on for a period of five years. The Clock Tower at Westminster is five and a half miles distant from the point of observation in a north-by-west direction. The large bell “Big Ben” was designed by Lord Grimthorpe, and was cast in 1858; its weight is about 14 tons. It is 9 feet 5½ inches in diameter, and 9½ inches in thickness, its tone being E. The observations were 976 in number, and were made at the hours of 9 A.M. and 9 P.M. The bell could be heard more frequently in the evening than in the morning, and on Sundays it was more frequently audible than on week days. The direction of the wind most favourable for hearing “Big Ben” was between west and north. The observations were also discussed in relation to temperature, moisture, cloud, and barometric pressure. A paper by Mr. A. W. Moore was also read on “Earth Temperatures at Crankbourne, Isle of Man, 1880-1889.”

— NITRATE OF SODA IN EGYPT.—Prof. W. C. Mackenzie of the College of Agriculture, Ghizeh, has sent “Nature” some interesting information with regard to the existence of nitrate of soda in Egypt. It appears that the natives of Upper Egypt, from Keneh to Esneh, are in the habit of carrying a substance called “tafi,” from the hills on the east side of the river, to manure their fields, especially the Maize crop. That this was done seems to have been well enough known to many people in the habit of spending some time there, but beyond a casual knowledge of the fact that the “tafi” was used as a manure, no further interest seems to have been taken. What the valuable ingredient was, does not seem to have been known, and the name “tafi” was used indiscriminately for clay for pottery and clay for manure. Analyses of several samples of this substance showed, however, that they contained nitrate of soda from 2 per cent. to 18.5, mixed with varying proportions of chloride and sulphate, as well as calcium carbonate and clay. Further examinations of other samples did not show such a high percentage, the richest containing only 4 per cent. Prof. Mackenzie visited the deposit in the hills east from Luxor, and some eight miles distant from the town across the desert, and there found the “tafi” right on the face of a limestone hill, apparently cropping out of the rock. Samples taken at different heights gave percentages varying from 2 to 9.5 of nitrate of soda. On sending in a report about this nitrate, Nubar Pasha, the present Prime Minister, arranged to send up Mr. E. A. Floyer and Prof. Sickenberger to investigate the whole question, and endeavour to estimate the quantity. The investigation will no doubt throw considerable light on the origin of this curious occurrence of nitrate.

— LEAVES OF TREES AS FODDER.—The United States Consul at Chemnitz, in a recent report, describes the experiments made by farmers on the Continent last year to feed their cattle on the leaves of trees. The French, he says, have taken the lead in the movement. They recommend exclusively the leaves of the Hazel, Aspen, Ash, Elm, and Willow. The leaves, after being gathered, are spread on the barn floor to the depth of 3 or 4 inches, and are turned once a day. They dry in from three to five days, according to the weather. When dry they are piled up ready for use. It is profitable to prepare each day’s supply twenty-four hours beforehand. There is mixed with the leaves to be served each day a small amount of chopped Turnips, leaving the whole to ferment. Just before feeding, Clover, hay, or Lucerne is sometimes added. This food has been found especially good for milch cows. Young shoots and branches of trees, with their new leaves, are picked off every five years and fed to sheep. These animals are very fond of the Aspen, because of its resinous and sweet buds. Willow leaves and bark mixed with oats are regarded as a very pleasant, nutritious, and strengthening food for horses. It is not good to feed the leaves green; in fact the cattle prefer them dried. Again, they should be served only with other fodder. When the leaves are young they contain a large quantity of nitrogen. As the season advances this grows less, as do also their nourishing properties. It is said that July and August, when the leaves are full grown, is the best time for harvesting them. Experiments were made with Potato leaves, but the results were unsatisfactory. They should be used only in times of greatest scarcity, and only then to save the live stock. The Potatoes deprived of their leaves suffer much more than is made up by their leaf value for fodder. The Consul, according to “The Times,” concludes:—“All this trouble in Europe is taken to find substitutes and to save cattle, and yet 2,000,000,000 bushels of the best food for man and beast burden the granaries and barns of the United States. Why do not the European farmers take our Maize? It is infinitely better than their best substitute, is one-third as dear as Rye or Wheat, and, in the testimony of their own chemists, almost as nutritious; though twice as dear as Potatoes, it is more than four times as nutritious.”

PLANTS FOR HOUSE DECORATION.

(Concluded from page 380.)

METHODS OF CULTURE, PREPARATION, AND ARRANGEMENT.

FOR the successful culture of the plants enumerated in the previous instalment on the above-mentioned page houses will be required. One structure should be for the hardier plants, an intermediate house, a propagating pit, and a stove for those kinds that need heat and moisture. For a start suitable plants should be purchased from a nurseryman, and after this an energetic man will, if he has the convenience above mentioned, manage to maintain a stock, also materially increase most of the plants enumerated. Palms are sometimes raised from seed by gardeners, and many of the commoner kinds germinate freely when sown in pans containing soil, and plunged in a bottom heat of from 80° to 85°. Still, I think the raising of Palms is best left in the hands of those persons who make a speciality of them, and from whom it will be advisable to obtain what is wanted.

of the year. The latter can also be perpetuated by notching around the stem and tying sphagnum moss, or a split pot as recommended for *Dracenas*. *Cyperus alternifolius* is propagated by division, or by taking the ripe leaves, and placing them in a pan of water in a warm house. *Pandanus Veitchii* when it grows to a fair size produces offsets, which can be removed and easily rooted in heat. *Aspidistras* are usually increased by division, and *Grevillea robusta*, *Aralias*, and *Acacias* from seeds. Where Ferns are extensively grown in variety it is no trouble to maintain a sufficient supply by taking care of the stray seedlings that come up. Some kinds are more difficult to raise from spores, and may be increased by division. *Asplenium bulbiferum*, a most useful Fern, can be had in almost any numbers by pegging down the ripened fronds in a pan. If this plan is adopted hundreds of young Ferns will soon be forthcoming. *Gloxinias*, *Begonias*, and *Cyclamens* are all easily raised from seed where heat is at command, and these may be flowered for the first season in small pots. The stove is also the home of *Caladiums*, *Acalyphas*, *Eucharis*, *Pancratiums*, *Marantas*, and *Alocasias*, and when used for the decoration of the rooms or tables these plants should not be kept in the dry and cooler atmosphere too long.

There are many systems of growing *Chrysanthemums* and innumerable varieties. The Japanese and reflexed blooms are, I think, the best to grow for decorative purposes, as most of the incurved kinds give poor results, being too tall for arranging in the house. I usually commence to insert my cuttings in December and continue taking some up to April, the latter coming in especially useful. Three or four cuttings are placed in a 3-inch pot, and I use a compost of two parts sifted loam, one part leaf mould and one part sand, to which *Chrysanthemum* ash is added if procurable. I like to have a frame in an intermediate house for the cuttings, as when put in a frame they seldom flag, and soon root. When rooted they are placed singly in 3-inch pots and returned to the frame for a few days until a fresh start is made, when I put them in a cool house from which frost can be excluded. As soon as they have filled these pots with roots they should be shifted into 5-inch pots, using three parts fibrous loam to one of sand and crushed oyster shells.

Immediately the weather is favourable I place them in a cold frame, and on fine days the lights are lifted off for a few hours, and except in case of frost air should be left on at night. Here, in Torquay, we can usually stand our plants in the open early in April, but in most places it would not be advisable until May. About the last week in May I go over the plants and pick out a number of varieties that I know if grown on the single-stem system with three or four flowers on each, do not grow more than from 4 to 6 feet in height. These I repot, using good fibrous loam, a little half-inch bone, charcoal, and soot, and remove to their summer quarters. The others are kept rather dry for a week, and then cut down from 4 to 6 inches from the pot. When the shoots have made a start these are reduced to three or five on each plant, and the latter repotted in same compost as the others. About the middle of July I examine the plants and select those I want for late work. These are pinched and are then allowed to grow, the others are staked. About the middle of August they commence to show their crown buds, which should be taken if dwarf plants with large flowers are required. At the end of September all, except the late plants, are taken under glass, keeping the late ones in a sheltered position and outdoors as long as possible. I never allow a plant, either early or late, to stay outdoors after the buds commence to show colour. By treating the plants as I have stated, I am able to arrange effective groups, and the plants range from about 1½ to 6 feet in height according to variety. Manures must be used after the pots are well filled with roots if the best results are to be obtained, and the

foliage kept in good condition, which is very essential for decorative purposes. Almost any kind of manure will do for a change, and weak and often should be the rule. I always discontinue the use of stimulants after the buds are showing colour, as I believe the blooms retain their freshness of colour much longer by this means, and are not so given to damping.

I only advise growing a limited number of varieties of *Chrysanthemums* that are known to be good for this purpose, and which prolong the period of flowering as much as possible. For early blooms *Madame Desgrange*, *Mrs. Hawkins*, and *Madame G. Grunerwald*, stopped early in April, will come into flower in June, and by stopping later plants these varieties will last until such kinds as *Madame Lacroix*, *C. E. Shea*, *W. Holmes*, and *Lady Selborne* are in bloom, which will form a succession until the midseason varieties are ready. For late purposes the following will be found indispensable—*Admiral Sir Thos. Symons* (single), *The Virgin* (single), *Mrs. E. W. Clarke*, *Boule de Neige*, *Lady Lawrence*, *Kate Mursell*, *Boule d'Or*, and *Julie Lagravère*.

Carnations may be had in flower all the year round. *Primulas*, *Salvias*, *Mignonette*, and *Zonal Pelargoniums* are all well known useful plants, and require no further mention here. *Azaleas*, *Rhododendrons*, *Arum Lilies*, *Roman* and other *Hyacinths*, *Cytisus*, *Deutzias*, *Spiræas*, *Marguerites*, and winter flowering *Begonias*, with forcing and being retarded, may be spread over a long period.

As to the arrangement of the plants I can say but little, as different places will require various styles, but one thing I will advise is never to



FIG. 69.—ODONTOGLOSSUM CRISPUM VAR. NOBILIUS. (See page 423.)

With regard to *Dracenas* there is no difficulty in increasing the stock of most varieties, for in repotting a plant there will generally be found at the bottom of the soil one or more "toes"—thick roots. If these are taken off with a sharp knife, put into small pots in a mixture of peat, leaf mould, and sand, and plunged into a brisk bottom heat, they will soon begin to grow, and are not long in making useful plants. If a plant has become rather tall, and a shorter one is required, the best way is to notch the stem around under the leaves, split a 3-inch pot, and then place a stake by the side of the plant, and put the split pot around the notched stem, tying to the stake to keep it in position. Fill it with a mixture of sphagnum moss, peat, and sand, place in the propagating pit, and if kept moist it will soon emit roots from the cut part. When it has filled the pot with roots cut the stem, then there is a plant ready for a shift into a larger size pot, and with foliage right down to the soil. The old stem if left in heat will produce several shoots, and if these are taken off with a heel they readily root. Some persons notch the stem and tie sphagnum moss around the wound, keeping well syringed, and when roots are emitted through the moss cut off and place in a pot.

Ficus elasticus is easily propagated, the tops or side shoots rooting in a brisk bottom heat; but where large numbers are required it is usual to take plants with stems of medium size, and cut into short pieces, each with an eye. These pieces are put in pots and plunged in a brisk heat, when each one will make a plant. It is done in much the same way as propagating Vines from eyes. *Curculigos* are propagated from offsets, and *Crotons* by cuttings at almost any time

crowd the plants. Let each be seen distinctly, for plants ever so well grown lose their effect when overcrowded. In conclusion I will add that the decoration of the house in many places is one that will bring out all the abilities of a gardener, especially if he has a limited stock. Of course, where every convenience in the way of labour and room is at hand, his task will not be so arduous.—PERENNIAL.

ADIANTUM CLÆSIANUM.

A PLANT of this charming new *Adiantum* from South America was exhibited by MM. Linden, Brussels, at the Temple Show last week, and being quite distinct a first-class certificate was awarded for it by the Floral Committee of the Royal Horticultural Society. The fronds,

proved most injurious to Potatoes, Runner and Kidney Beans, and what few Vegetable Marrow and Tomato plants there were planted or exposed. It is the Strawberries, though, that have suffered most. They were remarkably promising, but most of the flowers open and opening, and the greater portion of exposed fruit in various sizes are all black. Gooseberries and Currants have also been damaged, but the Pears seem uninjured, and promise to be an enormous crop. Apples set badly, and were shattering off wholesale before the frosts, and I fail to see much difference since. Plums are apparently uninjured, and where they flowered early the crops are very heavy.—W. IGGULDEN, *Somerset*.

"LOOK out for a hailstorm about the 22nd of May, and be sure of a smart frost succeeding it." This was a weather note given to me the first spring I spent in Ireland, and many springs that have since come and gone have borne witness to the soundness of that advice. How



FIG. 70.—ADIANTUM CLÆSIANUM.

as depicted in the engraving (fig. 70), are rather short, the plant having apparently a dwarf habit, but they are very attractive. The ground colour is a pale green, blotched and radiated with white. It is a beautiful Fern, and one which in due course will probably become popular.

THE RECENT SEVERE WEATHER AND GARDEN CROPS.

ON the 19th inst. the weather was bitterly cold, a piercing north-easterly wind prevailing, with hail and snow storms. On the morning of the 20th the mercury of the thermometer stood at 25°, or 7° of frost. We also registered 7° on the morning of the 22nd, which has done a good deal of damage to the crops of Potatoes, Vegetable Marrows, and Kidney Beans. Many acres which a few days ago looked so promising are now a blackened mass with the frost. This will be a great loss to the market gardeners. The early Strawberries have suffered very much, all the best fruit being spoiled.—G. R. ALLIS, *Old Warden Park, Biggleswade*.

ON the mornings of May 20th and 21st very destructive frosts were experienced hereabouts. In several places 5° were registered, and this

often does departing winter, "Who often takes leave, yet is loth to depart," turn round and have another angry snap at us! It appears to be the rule, and this spring is not an exception. On the 20th we had a suspicion of snow in the morning, a rattling hail shower in the evening, with 4° of frost at night. Here Strawberry blossom in the critical stage is rendered abortive, although a good portion is comparatively safe, some being set, and a quota yet undeveloped. Potatoes in the garden were just nipped; but a "tale of woe" comes from the fields in the neighbourhood, some are reported to be killed outright.

Four degrees of frost here means more inland. Mr. Bedford writes me from Straffan, Kildare, "Frost here on Monday morning (21st). Everything tender cut to the ground; Strawberry crop is clean wiped out, as the plants were in full bloom."—E. K., *Dublin*.

JUST a line as to the state of the weather here. We have had some cold north-easterly wind lately, which has retarded vegetation to such a degree that it has changed what would have been an exceptionally early spring to an ordinary one. On the mornings of the 21st and 22nd slight white frosts were reported from different parts of the island, but only in one instance, at Wroxall, have I heard that it has affected vegetation at all. There the Potato crop was cut down, and other early produce blackened. New Potatoes are being dug here

from sheltered borders out of doors. Early Peas are podding, and so far all garden and fruit crops look well, and have escaped the disastrous frosts experienced in other parts of the country, as reported in the *Journal of Horticulture*. The first blooms of Sweet Peas, Shirley Poppies, and common white Pinks are just expanding in the open borders.—C. ORCHARD, *Bembridge, Isle of Wight*.

"FEW people perhaps remember such a destructive and disastrous May frost as that which occurred on the 21st of May in this year of grace. Following upon a week of abnormally cold weather, we had a slight frost on Saturday night and Sunday morning, but it was left to the night of the latter day, and yesterday, to complete the work of destruction. A frost of any sort in May is always dangerous, and often destructive; but when it comes to 10° of frost—or 22° Fahrenheit scale—then, indeed, is the disaster complete, and the hopes of the year absolutely and entirely destroyed.

"The morning of the 21st broke bright and sunny after the overnight frost, and disclosed a sorrowful sight. Ice a quarter of an inch in thickness was plentiful, and on the north side of walls and buildings the ground remained frost-bound far into the forenoon. In most gardens, and in many fields, Potatoes were well above the ground; by noon there was nothing but the blackened remains of the haulms above the ground level, so effectually are they killed down. Seeding Turnips, instead of being green, are turned to a sickly purple hue. According to Mr. W. Thompson, the thermometer at the Deanery Gardens registered 10° of frost."

The above cutting from the "Newcastle Daily Chronicle," will give you an idea of what the weather has been in the north. We registered 5° of frost here this morning, but our garden is sheltered.—W. A. JENKINS, *Aldine Grange Gardens, Durham*.

IN this district on the 20th and 21st we registered 8° and 6° of frost, and much damage has been done. Some persons have suffered far more than others. Potatoes, Dwarf, Runner, and even Broad Beans have been cut down. Happily we had not commenced bedding out.—G. FULFORD, *Trafalgar, Salisbury*.

IN this district, near to the Solent, the cold north-east winds have been injurious to vegetation. Owing, no doubt, to the dry position of these gardens Potatoes, Runner and Dwarf Beans, Strawberry bloom, and exposed bedding plants have not suffered in the least from the recent severe frosts which have been general in nearly all parts of the country. In some of the cottage gardens near here, however, Potatoes have been cut down, and much harm done. Apple blossom was plentiful, but much of it abortive, the caterpillar being most troublesome. Many Oak trees in the woods are badly infested, the young leaves on some branches being entirely eaten.—G. GARNER, *Cadland Park, Southampton*.

THE recent frosty nights have severely cut the Potato crops in the part of Devon lying between Exmoor and Dartmoor, but they do not seem to have done much injury to the Apple trees. Among some of the old villagers the night of the 21st goes by the name of "Frankincense night." The story, says the "Western Daily Mercury," runs that an old man named "Frankincense" prayed for three nights running at this period of May for frost in order to diminish the crop of cider Apples in the interests of temperance. The consequence is seen in annual frosts (so it is imagined) at this time of year, after which they are supposed to disappear until summer is past.

IN this neighbourhood crops have received a very severe check on the night of Sunday the 20th, and also on the night of the 21st. We had from 8° to 10° on the former, and 6° on the latter, and coming so suddenly after such a mild favourable spring it has played great havoc. Potatoes are all killed to the ground, French Beans and Scarlet Runners likewise. Fruit crops, which, with the exception of Apples, were most promising, are injured very badly. Pears were frozen through. All blooms of hardy Azaleas and Rhododendrons were blackened, also many of the young shoots; in fact, such a severe frost so late cannot be remembered by anyone here.—R. C. WILLIAMS, *Crosswood, Aberystwith*.

As some of your readers may like to compare notes of the results of the frost on Sunday night, the 20th inst., and Monday morning, I send a few particulars. In south-east Somerset I find the frost itself was from 7° to 10°, but it was accompanied with a cutting north-east wind. I have known several severe frosts in May and June during the last thirty years in this neighbourhood, but have not known one so disastrous, and attended with such serious results, as the one last week. The most mysterious thing is that these early and late severe frosts generally come on a Saturday or Sunday night.

The following is a summary of the result of the frost:—Walnut trees cut fearfully, also Planes, Oak, and Ash, from seedlings up to 12 and 15 feet. Beech (Copper), and some other hardy trees are injured more or less. Of hardy shrubs, the following have the new growth entirely destroyed:—*Abies Nordmanniana*; Yews, both English and Golden; *Aucuba japonica*; *Osmanthus*; Laurels, common, Caucasian, and rotundifolia, also the Portugal. Fruit appears very much injured, especially Gooseberries. I fear Apples and Pears will also suffer very much. Of course Potatoes, French Beans, and Marrow, where above ground, are in many places quite destroyed.—B. R. D., *Yeovil*.

FOR the last few days a fierce north-east wind has been blowing at intervals, with some sleet and snow, and on Monday night the thermometer dropped two degrees below "the freezing point," with most lamentable results to the early Potato crop in exposed fields and gardens. Around this town, on the 21st it was painful to see the blackened, charred-looking foliage that but a day before looked so healthy and promising. It is remarkable what a capricious climate we have. Not once since January has the same low temperature been reached here. A curious circumstance in connection with this fact has been that in certain places some varieties of Potatoes, as Ashleaf Kidneys, wholly escaped harm, while Flounders, Early Rose and Kemps, with more tender foliage, were badly injured. Several gardens that were sheltered, and which the early rays of the sun did not catch, escaped injury. Where the Potatoes have been badly injured the growth will be thrown back from a fortnight to three weeks, and the quality of the tubers is then never so good, as all elaboration of sap in the burned foliage has now ceased. My walled-in town garden has not fared so badly as others. I notice my new Strawberry, "Royal Sovereign" (Laxton), in full flower, quite healthy, has escaped injury.—W. J. MURPHY, *Clonmel*.

SINCE Monday the 21st we have had frosts more or less varying from 2° to 8°, with very cold winds and dull weather. Words almost fail to describe the havoc caused by the frost. Acres of Potatoes are laid level with the ground, one farmer a short distance from here having lost a crop which he valued at £1000. Shrubs which had been pruned in and have made 2 or 3 inches of growth are quite blackened. In some places Currants and Gooseberries look as if they had been boiled, the ground underneath the trees being literally strewn with such fruit. All the early Strawberry blooms are quite destroyed, as are also Dwarf and Runner Beans. The oldest inhabitants in this neighbourhood say that they cannot remember a more destructive May frost.—R. P. R., *Liverpool*.

WE registered 12° of frost on the nights of the 20th and 21st. The Oak, Ash, and Birch foliage is ruined, as also is the Strawberry crop.—J. M., *Macclesfield*.

THE amount of frost on the morning of the 21st and the effects it has produced in this district (Mid-Sussex) are extremely variable. Although only 2° of frost were registered on our shade thermometer, but there must have been from 4° to 6° on the grass. There was ice as thick as a sixpence. The five days, 13th to 17th inclusive, were fine and warm, the mean temperature being 59.1°. The five following days, 18th to 22nd inclusive, the mean temperature was 47.3°, a difference of 11.8°. The record of temperature gives but a very faint idea of the effect produced. Potatoes 9 inches high were cut down to the ground where exposed to the north-east wind. The young growths of Ash, Oak, Holly, common and Portugal Laurels in exposed places are all blackened as if scorched with a red-hot iron.

In one market garden where a good breadth of Gooseberries is grown without top fruit I hear the fruit can be gathered under the bushes in bushels, while where there is top fruit they are comparatively uninjured. In walled, well sheltered gardens in fairly high positions but little damage has been done, leading to the conclusion that it was the bitter cold north-east wind that continued for nearly a week after that did the damage more than the frost. Monday was much warmer, with some welcome showers from the south-west.—R. I.

LESSONS FROM THE RECENT FROSTS.

THE indomitable energy of the British race has frequently been attributed in a large degree to the quickening influence of our variable climate. If this is so, we must indeed consider it a wise provision of Providence, for at times like the present, when we see devastation so painfully apparent among our field and garden crops, those who are engaged in either commercial or private gardening require all the unflinching courage and determination accredited to the inhabitants of our island home to enable them to face their present difficulties, and to press onward in spite of disheartening reverses.

Market gardeners have perhaps suffered more from the recent frosts than any other class, especially those persons who are enterprising enough to endeavour to be the first in the market with their crops, because they know that it is frequently the only way to secure a really remunerative return for them. In their case there is great temptation, especially during a season like the present, to sow and plant their crops at dates too early to be safe, but they know that something must be risked in order to "keep ahead," and when a "lucky hit" happens to be made it to a great extent compensates for occasional losses. Still, it is necessary to exercise great judgment in the matter, and when such tender crops as Potatoes are planted early sheltered positions ought, if possible, to be selected for them, or failing this, some kind of protecting material placed in readiness for the advent of frosts, which are seldom severe enough to do serious damage when no previous warning is given. The recent frosts were no exception in this respect, as the wind had for several days been in a very cold quarter, and severe weather was expected and provided against by many, who fortunately preserved valuable crops by placing a little rough strawy material over the tops of Potatoes and French Beans wherever they were growing in exposed positions. Where these crops are growing under the shelter of walls they have generally escaped uninjured even when left unprotected; in fact, I have not yet met with any crops to which serious injury has been

done wherever they are growing in sheltered positions, and as we are continually receiving sharp lessons as to the fickleness of our climate it is a risky proceeding to attempt to produce early crops largely in the open quarters, unless, as previously pointed out, some means of affording protection is kept in readiness.

Early Strawberry plants, on which much of the fruit was set, have not been seriously injured; but later ones, which were in full flower when the frost came, are in a bad way. Even Peas in some situations are severely crippled. The amount of injury done to plants and crops generally has been regulated to a great extent by the exact condition of their growth; where this was in a very young state the result has been disastrous. In some places we have shrubberies and beds edged with Ivy; there the young shoots have been killed outright, whereas that growing on walls, which had made its growth earlier and was there more solidified, shows no sign of injury, even where the aspect is an eastern one. Apples have suffered seriously, as although the fruit was set, it was in so young a state as to be unable to resist the intense cold. Plums, as far as I am able to judge at present, have not been greatly injured, neither have Peaches or Nectarines.

Turning to Roses, I find that those pruned at the latest date have suffered the most, on account of the tender state of the growths. Our earliest pruned Tea Roses, which are growing in front of a wall only 3 feet in height, are now affording beautiful blooms daily, and I have not been able to discover a single leaf or bud to which injury has been done by frost; this is doubtless due to the fact that the growth being made during the bright warm weather experienced early in the season, is sturdy and firm, and I think proves the un wisdom of keeping to hard and fast rules as to the exact dates for pruning Roses. The weather experienced each season, and the probability of its continuance for a few weeks from the time of pruning, are matters upon which sound judgment may prove of immense service. I have frequently noticed that it is by no means a general rule for the earliest pruned plants to suffer the most, but those whose growths happen to be in a very young state when frosts prevail, which they generally do during May. Provided therefore that we have favourable weather during March, I think our aim should be to prune early enough to have the growths as firm as possible by the treacherous month of May.

In the flower garden, too, many a sharp lesson has been taught to those who are unduly anxious to place bedding plants in their summer quarters. Owners of small gardens are, as a rule, the most venturesome in this respect. Their experience this year has been dearly bought, for it is indeed sad to see the blighted aspect of many a wayside villa garden. Even when the plants have not been killed outright the check and disfigurement received will cause them to be very late in making a good display. In this respect they will be far outstripped by plants which have yet to be planted. It seems a pity that these things should happen, but it is no new lesson which we are learning, only an old one pressed upon us again with striking force, and to my mind, as far as bedding plants are concerned, no one ought to have been misled into early planting this year, seeing how persistently the wind kept to the north and north-east during the greater part of May. It is only during exceptional seasons like that of 1893 that we are justified to bedding out such tender plants as Pelargoniums before the last week in May or the first in June, unless the beds are protected during uncertain weather.

Disasters have their beneficial tendencies as well as successes, and the temporary reverses experienced in many quarters this year will doubtless have the effect of stimulating in us those great qualities of cool judgment and persistent perseverance which have won fame and honour to the British race throughout her vast empire.—H. DUNKIN.

SYRINGING MALMAISON CARNATIONS.

I HAVE been reading with much interest the letters that have appeared lately in your columns on this subject, and I hope to see the matter well discussed, for, as Mr. Dunkin (page 382) truly says, by that means we shall gain the best information as to the treatment of this favourite plant. It is not so much those growers who have houses specially constructed for and containing nothing else but Carnations, but those who have only a few specimens and have to grow them in houses with many other different plants find them difficult to cultivate and are glad to have the matter fully discussed.

Doubtless, as Mr. Hamilton (page 367) says, there are many persons who have grown them well without syringing, but I consider his statement rather too sweeping when he remarks that all those who syringe will quickly lose their plants, and will be taking them to the stockhole. I read Mr. Dunkin's first letter on the matter. I have not it by me now, but if I remember rightly he advised the syringing principally between the pots and on the stages where dry, and on the foliage on fine days, with less water at the roots than was usually given, keeping the plants well up to the glass with free ventilation: I took particular notice of it at the time, for my plants were not doing as I wished, and were badly attacked with the fungus, so much so that I did not expect we should have a bloom, and I was thinking of throwing them all away. My employer is particularly fond of these Carnations, especially after seeing the fine collection of a large grower for the trade. Previously I had been timid of syringing, but since reading Mr. Dunkin's letter I have done so on all favourable occasions, and no one would believe that the plants are the same; they are now looking the picture of health, with six or eight bloom spikes on each plant.

They are all last year's layers, and I am in hopes now of being able to keep down the dreaded fungus. Still, my case might not be the same as many others, and I hope to see the matter now that it has started well threshed out, and all information possible gathered.—R. C. W. CROSSWOOD, *Aberystwith*.

STAYING in the neighbourhood of Burton I thought I would have a look at the "Malmaison" Carnations I had heard so much about lately at Byrkley and Rangemore. I must confess they are very good indeed, those at Rangemore being magnificent, especially the plants layered last August twelve months. I counted as many as ten blooms on a plant, from those fully expanded 6 inches across to buds as large as bantam eggs. The plants were clothed with dark green foliage to the rim of the pot. Two more houses were filled with younger plants, layered last July. These were showing buds as large as Filberts, and in some instances were flowering from the side growths. Mr. Bennett, the gardener, was unfortunately ill, so I missed any little information I might have gained from seeing him.—R. D.

ROYAL BOTANIC SOCIETY.

MAY 30TH.

A MORE beautiful show has never perhaps been held under the auspices of the Royal Botanic Society than that which took place yesterday (Wednesday) in the gardens at Regent's Park. The exhibits were not quite so numerous as we have seen them on such occasions, but so far as quality was concerned no one could be disappointed. The same remark applies to the arrangement of the plants. Here we find a departure from the stereotyped methods. Long, formal rows of tabling crowded with plants and flowers are conspicuous by their absence, the exhibits being arranged in artistic semicircular, or rather irregular, groups on plots and banks of turf divided by winding gravel walks. It would be well were this system more generally adopted by managers of flower shows. Unfortunately, a heavy thunder shower early in the afternoon somewhat marred the proceedings, and doubtless prevented many persons visiting what must be termed one of the best metropolitan floral exhibitions of the year.

As we have said, the plants shown were of excellent quality. Roses were particularly fine, the same applying to Azaleas and trained plants generally. For twelve stove and greenhouse plants Mr. J. F. Mould, Pewsey, Wilts, was placed first, the specimens being very fine. They comprised a well grown *Anthurium Scherzianum*, *Hedera tulipifera* (finely flowered), *Erica Cavendishi*, and *Azalea Jean Vervaene*. Mr. A. Offer, gardener to John Warren, Esq., Handcross Park, Crawley, was second with much smaller but profusely flowered plants. The best of these included a beautiful *Ixora Colei*, *Clerodendron Balfourianum*, and *Statice Gilberti*. Mr. H. James, Castle Nursery, West Norwood, was awarded the third prize.

Messrs. W. Heath & Son, Royal Exotic Nursery, Cheltenham, secured the leading prize for six stove and greenhouse plants in flower. Among these were a good specimen of *Ixora Williamsi* and an excellent plant of *Erica eximia*. Mr. J. F. Mould was second with neat plants of *Erica Cavendishi*, *Ixora Williamsi*, *Azalea Heinrich Heine*, and *Aphelexis macrantha rosea*. In the class for six flowering specimen plants, open to amateurs, Mr. Offer was again first, showing *Anthurium Scherzerianum*, *Boronia elatior*, *Hedera tulipifera*, and *Erica Cavendishi*. Mr. H. Eason, gardener to B. Noakes, Esq., Hope Cottage, Highgate, was second with less bulky plants. These, however, were profusely flowered, especially *Azalea Reine des Blanc* and *Clerodendron Balfourianum*.

The ornamental foliage plants were well represented, some fine specimens coming from various exhibitors. Mr. Offer staged the best half a dozen plants, these including *Dieffenbachia magnifica*, *Crotons Queen Victoria* and *angustifolius*, *Cycas revoluta*, and a magnificent *Phoenix reclinata*. In the nurserymen's class for fine-foliage plants, Mr. H. James, West Norwood, was first with smaller plants than those shown by Mr. Offer. Mr. J. F. Mould was a close second. Variegated leaved plants were unusually fine, the best half dozen in the open class coming from Mr. Offer. There were *Nephtytis picturata*, *Maranta Makoyana*, *Crotons Wiesmanni*, and *Sunset*, *Dieffenbachia magnifica*, and *Alocasia macrorhiza variegata*. Mr. H. James was adjudged a second place, his contribution including a well grown *Pandanus Veitchi*. Mr. H. Eason was third with much smaller plants.

There were three competitors in the class for six Cape Heaths, the first being Mr. H. James. The plants shown by this exhibitor were very finely flowered, especially *Erica Cavendishi* and *E. ventricosa coccinea*. Mr. Mould was second with neatly trained plants, Mr. Offer coming in third. In both the latter cases the specimens shown were remarkable for the large number of flowers they carried.

Azaleas were exhibited in splendid condition. Mr. H. Eason was placed first in the open class for twelve specimens, showing profusely bloomed plants. Amongst others were *Azalea Flag of Truce*, *Duchesse Adelaide de Nassau*, and *Reine des Fleurs*. Mr. C. Turner, Royal Nurseries, Slough, was awarded the second prize for smaller but well trained and fine flowered plants. Particularly good amongst these were *Reine des Pays Bas*, Dr. D. Weigel, and *Madame Van Houtte*. Mr. R. Scott, gardener to Miss Foster, The Holmes, Regent's Park, was awarded the first prize for six greenhouse Azaleas, showing well bloomed plants.

In close proximity to these Mr. C. Turner, Slough, staged a number of neat specimens of Azaleas, for which a large bronze medal was recommended.

Ferns were splendidly shown, as they usually are at this exhibition. For half a dozen large specimens Mr. A. Offer was first, the plants staged being in excellent health and splendidly grown. They were *Microlepia hirta cristata*, *Dicksonia antarctica*, *Alsophila australis*, *Davallia polyantha*, *Cibotium Schiedeii*, and *Nephrolepis davallioides furcans*. Mr. J. Douglas, gardener to Mrs. Whitbourn, Great Gearies, Ilford, was second with very creditable specimens of the kinds generally grown for exhibiting. The plants, although smaller than those which gained the first prize, were in excellent health, and showed up conspicuously among other exhibits.

Pelargoniums were bright and beautiful, especially those shown by Mr. C. Turner in the open class for six plants. These, as may be expected, were excellently trained and well flowered. The most conspicuous varieties were Edward Perkins, Spotted Beauty, and Gold Mine. The same exhibitor was also first with six fancy Pelargoniums, these being even better than the show varieties. Ambassadors, Princess Teck, Ellen Beck, and Iona were very fine. Mr. J. Odell, Gould's Green, Hillingdon, was second for six fancy varieties, and also for the same number of Show Pelargoniums. Mr. Eason was first for six scarlet Zonal Pelargoniums, and for twenty-four Gloxinias.

Roses formed the most striking feature of the exhibition. In the competitive class for nine trained plants, Messrs. Paul & Sons, The Old Nurseries, Cheshunt, were awarded the first prize for huge specimens covered with blooms. The varieties exhibited included Celine Forestier, Edward Warren, Catherine Soupert, Charles Lawson, and Comtesse de Serenye. Mr. G. Rumsey, Joynings Nursery, Waltham Cross, followed with smaller plants.

Mr. C. Turner, Slough, was awarded first prize for a beautiful group of Roses, including specimens of the now well known Crimson Rambler, shown as standards, bushes, and pillar plants, also other varieties, carrying a large number of brightly coloured flowers.

Among the miscellaneous exhibits Mr. W. Rumsey exhibited a group of Roses in pots, also boxes of cut blooms, and for which a large silver medal was recommended. Messrs. W. Paul & Sons, Waltham Cross, secured a similar honour for a collection of Roses and other plants. Amongst these the new China Rose Duke of York was conspicuous. Some choice Ivies, Rhododendrons, and hardy flowers added interest to this contribution.

Orchids formed quite a feature in the Show, some excellent groups coming from various growers. For twelve exotic Orchids Mr. J. Douglas was placed first, this exhibitor showing, amongst others, *Cypripedium caudatum*, *Lælia purpurata*, *Miltonia vexillaria*, *Dendrobium Dalhousianum*, and *Cattleya Mossiæ*. Mr. G. Cragg, gardener to W. C. Walker, Esq., Winchmore Hill, secured the second award. For a dozen Orchids, open to nurserymen, Messrs. W. Heath & Son, Cheltenham, were first with grandly flowered plants of *Cattleya Mossiæ* Marmoral, *Lælia purpurata*, *Cymbidium Lowianum*, and others. The second prize in this class went to Mr. H. James, and the third to Mr. J. F. Mould.

Messrs. Hugh Low & Co., Clapton, sent a collection of Orchids which were well arranged (silver medal). A splendid group also came from Messrs. B. S. Williams & Sons, Upper Holloway, these plants being associated with others in a most effective manner. *Odontoglossums*, *Cattleyas*, *Cymbidiums*, and *Oncidiums* were very fine, the same applying to the new *Cannas* and other plants, which were likewise shown by this firm, and to whom a silver-gilt medal was awarded.

Messrs. J. Laing & Sons, Forest Hill, sent a beautiful group of Tuberous Begonias, Orchids, and miscellaneous plants. First-class certificates were awarded for Begonias Laing's Rosebud, Duchess of York, and Gloxinia Spotted Gem; while for the group a silver-gilt medal was recommended. Messrs. W. Cutbush & Sons, Highgate, contributed a large group of flowering and fine-foliage plants (silver medal), and Messrs. J. Veitch & Sons, Royal Exotic Nursery, Chelsea, sent some new and rare plants, including *Chionanthus retusus*, *Magnolia parvifolia*, *M. Watsoni*, and *Styrax obassia*. From the same firm came some *Amaryllises*, hybrid *Streptocarpus*, and *Phyllocacti* (silver medal). Mr. J. Douglas had some fine *Calceolarias* (silver medal), and Messrs. W. Balchin & Sons, Hassocks, Sussex, sent cut blooms of *Leschenaultia biloba major*.

Mr. H. B. May, Dyson's Lane Nurseries, Upper Edmonton, sent a group of Ferns (silver medal) and Mr. T. S. Ware a collection of hardy flowers, for which a first prize was awarded. The same exhibitor secured the leading prize for twelve plants of Tuberous Begonias, and staged some Carnations, including a new pink form of *Souvenir de la Malmaison*. Mr. J. Pike, South Acton, staged Carnation Uriah Pike in excellent condition, and Mr. Perry, gardener to J. C. Tasker, Esq., Brentwood, sent *Cannas* and Rhododendrons (bronze medal).

Messrs. Barr & Sons, Long Ditton, had a large collection of hardy flowers (bronze medal), and Mr. J. R. Chard, Stoke Newington, table decorations. Messrs. Paul & Sons staged cut garden Roses and *Cannas* (bronze medal), Messrs. Heath & Sons a group of Orchids (silver medal), and Messrs. J. Laing & Sons a splendid group of *Caladiums*, for which a first prize was awarded, the second prize going to Mr. J. Tubbs, Highgate. Mr. R. Scott was recommended a silver medal for a group of miscellaneous plants. An extra prize for cut Roses was adjudged to Mr. W. Robins, Hamell House Gardens, Aylesbury.

Mr. S. Mortimer, Swiss Nursery, Rowledge, Farnham, contributed a number of Melons, Sutton's Peerless, Progress, and Al Cucumbers, with boxes of Earliest of All and Perfection Tomatoes.



ROSE SHOW FIXTURES IN 1894.

- June 13th (Wednesday).—Colchester.†
 „ 20th (Wednesday).—Isle of Wight (Shanklin).
 „ 26th (Tuesday).—Westminster (R.H.S.).
 „ 27th (Wednesday).—Windsor (N.R.S.) and Richmond (Surrey).
 „ 28th (Thursday).—Canterbury, Eltham, and Sutton.
 „ 30th (Saturday).—Sittingbourne and Brockham.
 July 3rd (Tuesday).—Farningham, Bagshot, and Diss.
 „ 4th (Wednesday).—Croydon, Reigate, and Tunbridge Wells.
 „ 4th (Wednesday).—Ealing.
 „ 5th (Thursday).—Hereford and Norwich.
 „ 7th (Saturday).—Crystal Palace (N.R.S.)
 „ 10th (Tuesday).—Gloucester and Wolverhampton.*
 „ 11th (Wednesday).—Hitchin and King's Lynn.
 „ 12th (Thursday).—Bath, Harleston, Woodbridge, and Worksop.
 „ 14th (Saturday).—New Brighton.
 „ 17th (Tuesday).—Helensburgh.
 „ 19th (Thursday).—Halifax (N.R.S.), Halesworth, and Trentham.
 „ 21st (Saturday).—Manchester.
 „ 24th (Tuesday).—Tibshelf.
 „ 26th (Thursday).—Southwell.
 „ 28th (Saturday).—Bedale.
 Aug. 1st (Wednesday).—Chesterfield.

* A Show lasting three days. † A Show lasting two days.

Any date of Rose shows, or of other horticultural exhibitions where Roses form a leading feature, not named above, I shall be glad to receive as soon as fixed, for insertion in future lists.—EDWARD MAWLEY, *Rosebank, Berkhamsted, Herts.*

NATIONAL ROSE SOCIETY.—ANNUAL REPORT AND SCHEDULES.

THE new schedules of the N.R.S. which have been recently issued ought to be carefully studied by the smaller rosarian members of the Society who think of exhibiting, as there are so many new classes set apart especially for new members and small growers, that it is almost a pity the Executive has not called marked attention to these popular concessions when sending out the report. If our fickle climate will only give rosarians some chance of showing flowers at the Crystal Palace on the 7th July, there will be ample scope for the exhibition of skill in Rose culture, both by small as well as large growers. The most important changes from last year's schedules are in the following items:—

Class 15.—The Harkness cup for twelve varieties, open to all growers of less than 1000 exhibition Roses.

Class 23.—Six distinct varieties, open to members who have joined the N.R.S. since the 1st July, 1893.

Class 25.—Twelve distinct varieties, open to members residing within eleven miles of Charing Cross.

Class 40.—Six distinct Teas, open to members who have never won a prize.

Class 41.—Six distinct Teas, open to members resident within eight miles of Charing Cross.

There have been some other important alterations and some improvements in the arrangements of the classes, but the foregoing are those mostly affecting smaller growers of Roses for exhibition who naturally constitute the majority of the Society.

THE HARKNESS CHALLENGE CUP.

In reference to class 15, I am enabled by the courtesy of Messrs. Widdowson & Veale, silversmiths of the Strand, who have made this handsome bowl, to send you a drawing (fig. 71) of it, and also a description.

The bowl is an exact copy of one in Messrs. Widdowson & Veale's possession, being 130 years old, and hall-marked 1765. The body is fluted, and has a narrow border of matted work. The top edge, which is scalloped, has a close resemblance to the Monteith pattern, which is a well-known and popular design. The bowl is beautifully finished, and when mounted on its ebony pedestal will be a conspicuous and attractive object amongst the N.R.S. plate at the Crystal Palace July meeting. Messrs. Widdowson & Veale state they will be pleased to show the bowl to any member of the Society or the Press.

[We have seen the bowl at 73, Strand, and are bound to say it is more imposing and beautiful than is our representation of it, though this is as good as could be produced from the line drawing that was supplied. The bowl from the base to the points is 9 inches high, and 11½ inches in diameter. It is a foot high, including the black polished base, and covered with silver wire for the insertion of flowers. Whoever wins this handsome trophy may be justly proud of its possession, and the makers deserve a compliment for the excellence of their work.]

THE FROST OF THE 20TH MAY.

No doubt you will hear from various sources of the effects of the frost on the night of the 20th inst., a disaster much to be regretted, as

apparently it will greatly militate against the probability of the Windsor Rose Show being the success we had all looked forward to. What the effect may be on the Crystal Palace Show it is as yet too early to judge, many thinking their plants cannot recover. If, however, we have what seems for the moment unlikely, a genial month or six weeks from this time onwards, new growth may be formed on the Rose plants, at present so dreadfully crippled. The frost registered in various places on the 20th has been reported to me as varying from 6° up to 14°; the latter figure, which Mr. Lindsell noted at Hitchin, seems to have been nearly the lowest registered by any amateur in the southern counties, although I read that at Cambridge 15° was noted. No doubt the damage caused on the 20th was increased by the strong wind blowing from the north-east during that night of May frost. The Ash trees coming into leaf, as also the Acacias and Maples near my house, appear exactly as if they had been passed through a furnace, all the young shoots and foliage being perfectly black. As for fruit and Potatoes, the damage is universal and terrible for market gardeners.—CHARLES J. GRAHAME.

A WRECK OF ROSES.

I SEND you a few Rose shoots cut off at random from my plants. Many of them looked all right, but I cannot find a bud that is not completely frozen through and utterly spoilt. The frost was terrible with us, 11° on the grass both Sunday and Monday nights, and 4° in the screen. My thermometers are tested. My plants never looked so fine, and in the twelve years in which I have grown Roses for exhibition I have never seen anything approaching to the damage done. I am now practically re pruning my plants, but can hardly expect blooms until the chief shows are over. Yew, Laurel, Ivy, and Beech are scorched; Plums, Apples, Pears grown on close fences destroyed. The Strawberry crop is gone, of course, and bush fruits are falling wholesale. The Sandy and Biggleswade market gardeners have, I hear, suffered terribly.—E. B. LINDSELL.

[The growths received were magnificent wrecks, deplorable to see. Some of the stems were three-eighths of an inch in diameter, and bearing buds of the greatest promise, when the cruel frost converted the pith into pulp, and left black ruin behind it—a most regrettable visitation.]

THE REV. F. H. GALL.

It was with the deepest sorrow, a sorrow which, I am sure, will be shared by all who knew him, that I received the news of the death of my much-valued friend, which occurred on Monday last after a paralytic stroke on the previous Thursday. Mr. Gall was well known in the rosarian world, and probably there was not one of the members of our National Society who took a deeper interest in its welfare. He had been for twenty years or more an exhibitor, but, as he used oftentimes to say, he ought to have received a prize for being a most unsuccessful one. He was indefatigable in exhibiting, and was as content with very small honours as some of his more aspiring brethren were with their trophies and cups. I have known him for many years, and can truly say (like all his friends) that I had the greatest regard for him. By both birth and education he was a gentleman, and no one could ever accuse him of a mean or underhand action.

He commenced life as curate and rector in country parishes in Herts and Hants, and it was in visiting a parishioner that he caught the scarlet fever, which settled in his throat, and compelled him to undergo an operation, which so affected his speech that it prevented his afterwards fulfilling the duties of his sacred calling. I mention this because he never alluded to it himself, and many have sneeringly remarked, "How could he ever think of taking orders?" Maimed and crippled as he was in later years, he had been in early life very fond of our English game of cricket, and many were the tales he could tell of his Eton days, and of the old cricket celebrities who have now passed away. Notwithstanding his many infirmities he was ever genial and cheerful; never looking on the dark side of things, and actuated by the highest motives, he was ever ready to do a kindness if it lay within his power. In fact, he was what has been styled the highest form of man—a Christian gentleman. Personally, I shall miss him exceedingly, as he was a constant *habitué* of our Horticultural Club, and I always enjoyed intercourse with one whom I had been led to regard with much affection.—D., Deal.

WORK AMONG ROSES IN POTS.

THE crop of bloom on Roses in pots will be over by the time these notes appear, but as so much depends upon their present treatment as regards our future crop, I propose a few hints upon the same. A partial neglect now is bad policy, as any check at this stage means a later date in securing the wood most suitable for next season's use. When we can obtain blooms from sheltered spots out of doors, there is a natural tendency to place our plants outside. I fear this is too often done in a premature manner, and weak puny growth results. A check now means autumn before we can secure much real vigour again, and this in its turn means inefficient ripening for early forcing, as we cannot possibly succeed in the latter without the former. The bulk of our plants will remain in the house for a time longer yet, chiefly because of more uniform temperature and its great assistance towards well-finished growths. Syringing with soft water will be freely indulged in, a very slight shade afforded, and ventilation dispensed with as much as possible. Room for the confined air to gently move among the growths is all that is needed; we are sure to have some slight ventilation, but the full meed of this so often afforded is by no means a good plan until growth is farther advanced. As the plants have somewhat exhausted the soil,

weak liquid manures will be freely used, and any suspicion of drought carefully avoided.

By end of June or early in July, when the bulk of their growth is finished, we remove to the open, not before. Teas and Noisettes will continue growing as long as they are liberally treated, but it is not difficult to select a time when the majority of their shoots are comparatively still, and this is an excellent period for transferring them to the open. Before doing this admit more air, and keep a drier atmosphere for a few days, thus breaking the change in a more gradual manner than if removed at once. Unless we take this simple precaution the wood is apt to shrivel, and mildew, red spider, and many more Rose pests speedily attack them. I have known a house of Roses that were in the pink of condition. In less than a week after being stood in the open they were a wreck of their former selves, and altogether unsatisfactory. The fact was they were hardly sufficiently advanced, and the tender growth could not stand such a complete change. A week's preparation would have made all the difference.

I do not approve of plunging the pots completely, nor yet of placing them upon a concrete or ash bottom. Rather take a midway course, and half plunge in some easily handled material; cocoa-nut fibre refuse and sand is what we use, and find it keeps them cool at the bottom. This is more important than many seem to think, as much of the most valuable roots are made at the bottom part of the pots, and to run any risk of drying these up cannot be wise. Wind, air, and sun sometimes combine, and dry a plant before one can get round with the watering-can a

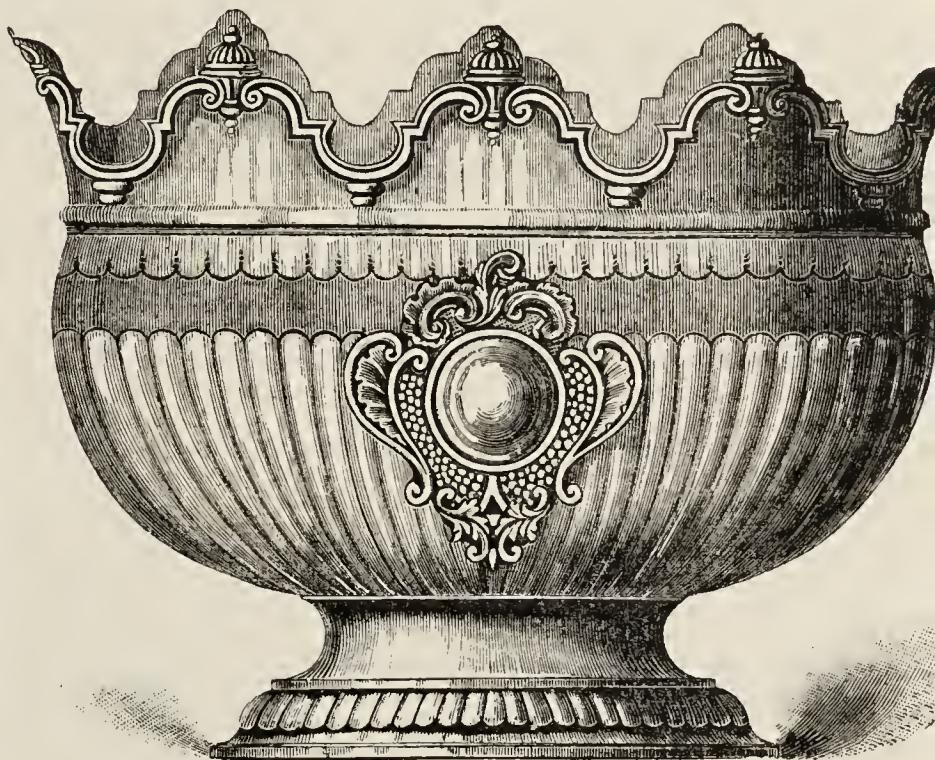


FIG. 71.—THE HARKNESS CHALLENGE CUP.

second time; and even if the soil be rather too dry, there is by no means the same parching when partially plunged.

Continue to syringe night and morning upon bright weather. This will allow of less water at their roots, and so greatly aid towards that efficient and early ripening of wood which is so essential a factor in the culture of Roses in pots. Some writers advocate keeping them much drier than I would care to see my plants, and I am sure many of the more fibrous roots must suffer severely under such conditions. A future note shall treat upon their autumn and early winter treatment.—PRACTICE.

INFORMATION WANTED IN NEW ZEALAND.

I HAVE for many years grown Roses, and for as many have I read every scrap about them that I could find in print. You know how it is when that passion takes proper hold of a man. I am, though I say it, a methodical man, and I am often sorely distressed at my inability to obtain the results of my observation and my reading co-ordinated.

Let me explain myself. As I have said, I have long grown Roses. I have bought Roses, budded Roses, grafted Roses, raised seedlings, acquired Roses by gift, and cuttings and buds thereof by petty larceny; though by these latter devious ways had little profit, for in most cases I have but added an unnamed Rose to my list, and so brought on myself all the worries of him who buys from a catalogue description that which he already has. I thus first acquired and then bought *La France*, "*Malmaison*," *Madame Zoutman*, and many others.

This brings me to the gist of my trouble—the identification of Roses. I do not mean of varieties, however, but of species. I have many Rose books—Dean Hole's, Cranston's, Gilmour's, and others, and I always read the *Journal of Horticulture*. I have also the splendid Report of the National Rose Conference of 1889; but none of these exactly "fill the bill." I want to know if there is any book that will enable me to distinguish between species (if I do not misuse the term) that all the books I have refer to as if the knowledge of them were elementary facts needing no teaching, but coming to the poor Rose amateur by intuition. By the way, let me say that our colonial nurserymen are generally Apple

and Plum men first, and Rose men—no, not second, but say twenty-second. Besides, they do not keep many species of Roses, only Hybrid Perpetuals, Teas, and Noisettes, and two or three odd varieties representative of other classes. However, there are to be found chiefly in old gardens quite enough of these to worry me.

How, for example, am I to tell *Rosa centifolia* from *R. gallica*, or *R. alba* or *R. arvensis* from *R. multiflora*? Is the *Rosa polyantha* of M. Viviani Morel's paper at the Conference represented by the miniature Paquerette? What is the Many-flowering Rose, an evergreen climber, often used here as a stock for the Gloire de Dijon family, and popularly called the Seven Sisters?

Then, again, there is to be found all over New Zealand and Australia a coarse double pink Rose, bearing heps freely, and often used as a stock, which two different nurserymen told me was "Celini." I find "Celine" in the catalogues as a Moss, but this is certainly not a Moss. Further, I find a red-barked nearly smooth Rose, bearing single pink flowers, which open petal by petal in a remarkable way, but I cannot obtain a name for it. Finally, I find a shrubby bush nearly free from thorns on the older wood, with foliage very like the Sweet Briar, and bearing a pretty double white bloom once a year (*Rosa alba* perhaps). Now, where can I obtain information about all these? A few more questions and I have done. I read somewhere of a "Journal de Roses." Is there such a journal regularly published, and if so, where can I procure it, and at what cost?

I have left myself little room to say something about Rose growing in New Zealand and Australia; but let me ask, does anybody in England grow our fine climbing Noisette The Rev. T. C. Cole? It is said to be a cross between *Maréchal Niel* and *Cloth of Gold*, and is a really splendid Rose in a dry climate or under glass. I never see it mentioned in your Journal. A final query. Is sulphide of potassium really a specific for mildew, and in what proportions is it used? Begging your lenient consideration for the worries of one far from a source of authoritative information.—RIMU.

[We shall be glad if any of our readers can assist our ardent Rose amateur in far away New Zealand.]

ROYAL NATIONAL TULIP SOCIETY.

THE annual Exhibition of this Society was held at York on May 22nd, in connection with one of the meetings of the Ancient Society of York Florists. Tulip growers will long remember this year's Show because of the generous and warm-hearted welcome accorded to them by the York Society, whose members seemed to have for the time being no other object in life than to make their visitors feel that they were welcome guests, to whom too much brotherly sympathy and kindness could not be shown. A considerable number of the York florists met those members of the Tulip Society who had come from a distance the night before the Show; the meeting resolved itself into an informal Tulip Conference. Messrs. Thurstan, Bentley and Needham gave impromptu addresses on the subject, which excited much interest amongst the local men, and there is no doubt that the culture of the Tulip will be encouraged in many ways by this memorable visit of the Society to the fine old city. The Show was held in the Exhibition Building, a fine hall, which the Corporation are liberal-minded enough to lend without charge to the York Society, and during the day over 2600 people visited the Show. The show of Tulips could only be called an average one, for the weather which up to the middle of April seemed to be specially favouring the Tulip, has for the last few weeks been of such a cruel ungenial character, that the early promise has been utterly belied, and Tulip growers have had one of the most miserable blooming times on record. The Show was nevertheless a creditable one to the Society, and many fine flowers were staged, the breeders being notably far above the average in numbers and quality. There were not many novelties of note. Mr. Thurstan, of Cardiff, showed some seedlings of merit for which he received a certificate. A few of the seedlings of the late Mr. Lloyd, of Petersfield, were seen for the first time in competition with older varieties, and it was gratifying to see that noble and scarce bizarre, Dr. Hutcheon, more plentifully shown than ever before. In the cup class there was a stiff competition for the first place, and the first and second stands were very close together. The Judges were Messrs. Housley and Booth (Stockport), Keysey (Gorton), and Woodhead, of Staleybridge, who performed their duties very creditably. The following awards were made:—

RECTIFIED TULIPS.

Class 1. *Twelve dissimilar Tulips, two feathered and two flamed in each class.*—First, Mr. James W. Bentley, Middleton, with a bright attractive stand of well grown, well matched flowers, comprising flamed bizarres Sir Joseph Paxton (fine) and Dr. Hutcheon (very fine); feathered bizarres Sir Joseph Paxton (rather heavy) and James McIntosh; flamed bybloemens Adonis (extra good) and Duchess of Sutherland; feathered bybloemens King of the Universe and Violet Amiable; flamed roses Rose Hill and Annie McGregor; feathered roses Mrs. Wood (exquisite feather) and Mrs. Atkin. Second, Mr. Charles W. Needham, Royton, with flamed bizarres Sir Joseph Paxton and Dr. Hutcheon; feathered bizarres Wm. Wilson (large and good) and George Hayward (good); flamed bybloemens Adonis (rather small) and Talisman (good); feathered bybloemens Elizabeth Pegg (a perfect flower) and Adonis; flamed roses Annie McGregor (too heavy) and Mabel (fine); feathered roses Heroine (very fine) and Comte de Vergennes (poor shape). Third, Mr. A. Moorhouse, Wakefield, with a stand of unnamed flowers, well marked but rather small. Fourth, Mr. Wm. Kitchen, Marple, with

flamed bizarres Charles X. and San José; feathered bizarres Willison's King and Sir Joseph Paxton; flamed bybloemens Lady Franklin and Duchess of Sutherland; feathered bybloemens John Hart and Violet Amiable; flamed roses Mabel and Clio; feathered roses Comte de Vergennes and Mrs. Lea. Fifth, Mr. Jas. Thurstan, Cardiff, with Dr. Hardy (flamed bizarre), Adonis (feathered bybloemen), and ten unnamed seedlings.

Class 2. *Six dissimilar Tulips, one feathered and one flamed in each class.*—First, Mr. James W. Bentley with fine well marked flowers, comprising flamed bizarre Sir Joseph Paxton, feathered bizarre William Annibal, flamed bybloemen Talisman (very fine), feathered bybloemen King of the Universe, flamed rose Annie McGregor, feathered rose Alice. To this stand was also awarded the "Samuel Barlow Memorial Medal," given for the best stand of six rectified Tulips shown in this and the following class. Second, Mr. C. W. Needham with flamed bizarre Sir Joseph Paxton, feathered bizarre Garibaldi, flamed bybloemen Adonis, feathered bybloemen King of the Universe, flamed rose Triomphe Royale, feathered rose Comte de Vergennes. Third, Mr. W. Mellor, Wakefield, with flamed bizarre Sir Joseph Paxton, feathered bizarre Lord Frederick Cavendish, flamed bybloemen Bessie, feathered bybloemen George Hardwick, flamed rose Mary Jackson (fine), feathered rose Lizzie. Fourth, Mr. James Jones, Denton, flamed bizarre Sir Joseph Paxton, feathered bizarre Sir Joseph Paxton, flamed bybloemen Lord Denman, feathered bybloemen Bertha (fine), feathered rose Industry, and an unnamed flamed rose. Fifth, Mr. W. Dymock, Stockport, with flamed bizarre Sir Joseph Paxton, feathered bizarre Type, flamed bybloemen seedling, feathered bybloemen King of the Universe, flamed rose seedling, feathered rose Heroine (very good). Sixth, Mr. A. Moorhouse with unnamed varieties. Seventh, Mr. W. Kitchen with flamed bizarre San José, feathered bizarre Charles X., flamed bybloemen Chancellor, feathered bybloemen Adonis, flamed rose Annie McGregor, feathered rose Comte de Vergennes. Eighth, Mr. J. Thurstan with flamed bizarre Dr. Hardy and five seedlings.

Class 3. *Six dissimilar Tulips, one feathered and one flamed in each class (for 10s. 6d. subscribers only).*—First, Mr. E. H. Schofield, Lower Wortley, with Sir Joseph Paxton, flamed bizarre; feathered bizarre, J. Moody; flamed bybloemen, George Edward; feathered bybloemen, Bessie; flamed rose, Aglaia; feathered rose, Heroine. Second, Mr. J. Bell, Stoke-on-Trent, with flamed bizarre seedling; feathered bizarre, Magnum Bonum; flamed bybloemen, Lord Denman; feathered bybloemen, Guido; flamed rose, unnamed; feathered rose, Miss Nightingale. Third, Mr. H. Gill, Leeds, with flamed bizarre, Sir Joseph Paxton; feathered bizarre, Lord Fredk. Cavendish; flamed bybloemen, Bessie; feathered bybloemen, Adonis; flamed rose, Mabel; feathered rose, Modesty.

Class 4. *Three feathered Tulips, one of each class.*—First, Mr. E. H. Schofield with John Moody, Trip to Stockport and Heroine. Second, Mr. Jones with Sir Joseph Paxton, Bertha and Modesty. Third, Mr. Bentley with Lord Stanley, Wm. Bentley and Alice. Fourth, Mr. Needham with Wm. Annibal, G. Hardwick and Comte de Vergennes. Fifth, Mr. Kitchen with Sir Joseph Paxton, Bienfait and Comte de Vergennes. Sixth, Mr. Moorhouse with Masterpiece, Bessie and Modesty.

Class 5. *Three flamed Tulips, one of each class.*—First, Rev. F. D. Horner, Burton-in-Lonsdale, with Dr. Hutcheon (grand); Mrs. Cooper and Mabel (very fine). Second, Mr. A. Moorhouse with Sir Joseph Paxton, Adonis and Mary Jackson. Third, Mr. Bentley with Sir Joseph Paxton, Adonis and Annie McGregor. Fourth, Mr. Kitchen with San José, King of the Universe and Mincerva. Fifth, Mr. Mellor with Dr. Hardy, Bessie and Mabel. Sixth, Mr. Schofield with Sir Joseph Paxton, George Edward and Aglaia.

Class 6. *Two Tulips, one feathered and one flamed of any class (Maiden growers only).*—First, Dr. Pegge, Beeston, Notts, with Sir Joseph Paxton and Alice (very fine). Second, Mr. Bell with Sir Joseph Paxton and Pickwick. Third, Mr. T. Fitton, Middleton, with Sir Joseph Paxton and Modesty.

Class 7. *Two Tulips, one feathered and one flamed of any class.*—First, Dr. Pegge with Sir Joseph Paxton and Alice. Second, Mr. Dymock with Sir Joseph Paxton and King of the Universe. Third, Mr. Gill with Sir Joseph Paxton and Masterpiece. Fourth, Mr. Moorhouse with Sir Joseph Paxton and Alice. Fifth, Mr. Bentley with Sir Joseph Paxton and Elizabeth Pegge. Sixth, Rev. F. D. Horner with Dr. Hutcheon and Garibaldi.

Class 8. *Single blooms in each of the six classes, feathered bizarres.*—First, Mr. Jones with Charles X. Second, Mr. Mellor with Garibaldi; third and sixth with Lord F. Cavendish. Fourth, Mr. Schofield with John Moody, and seventh with Criterion. Fifth, Mr. Bentley with Richard Yates, and eighth with Garibaldi. Ninth, Mr. Bell with Magnum Bonum. Tenth, Mr. Needham with Sir S. Smith.

Feathered Roses.—First, Mr. Dymock with Mabel. Second and third, Mr. Moorhouse with Mrs. Lea. Fourth, Mr. Bentley with Rosetta. Fifth, Mr. Kitchen with Comte de Vergennes. Sixth, Mr. Schofield with Modesty. Seventh, Rev. F. D. Horner with Mrs. Atkins, and eighth with Modesty. Ninth, Mr. Needham with Dr. Vernon. Tenth, Mr. H. Gill with Modesty.

Feathered Bybloemens.—First, second, and fourth, Mr. Schofield with Trip to Stockport. Third, Mr. Bentley with Mrs. Jackson. Fifth, Mr. Dymock with King of the Universe, eighth with Coningsby, ninth with John Hart. Sixth, Rev. F. D. Horner with Mrs. Hepworth. Seventh, Mr. Moorhouse with Bertha. Tenth, Mr. Kitchen with Violet Amiable.

Flamed Bizarres.—First, Mr. Bentley with Dr. Hardy, and ninth with Lord Stanley. Second, Rev. F. D. Horner with Sir Joseph Paxton, and third with Dr. Hardy. Fourth, Mr. Schofield with Excelsior. Fifth, Mr. Jones with Sulphur. Sixth, Mr. Moorhouse with Masterpiece. Seventh, Mr. Kitchen with San José, and tenth with Paul Pry. Eighth, Mr. Needham with Albert.

Flamed Roses.—First, Mr. Moorhouse with Aglaia. Second, Mr. Bentley with Minerva, fifth with Sarah Headley, ninth with Annie McGregor, and tenth with Triomphe Royale. Third, Mr. Schofield with Aglaia, and sixth with Queen of England. Fourth and eighth, Rev. F. D. Horner with Mabel. Seventh, Dr. Pegge with Aglaia.

Flamed Byblæmens.—First and third, Mr. Kitchen with Lord Denman, second with Adonis, sixth with Chancellor, and ninth with Prince of Morocco. Fourth, Mr. Mellor with Talisman. Fifth, Rev. F. D. Horner with Talisman. Seventh, Mr. Bentley with King of the Universe. Eighth, Mr. Moorhouse with Bessie. Tenth, Mr. Needham with Elizabeth Pegg.

The extra prize for the best feathered Tulip in the whole exhibition was given to Dr. Pegge for his bloom of Alice, feathered rose, exhibited in class 6, and the prize for the best flamed Tulip in the Exhibition went to Mr. James W. Bentley for the Sir Joseph Paxton flamed bizarre in his stand in class 1.

BREEDER TULIPS.

Class 10. *Six dissimilar breeder Tulips, two of each class.*—First, Mr. James W. Bentley with a fine stand of large, even flowers, comprising Goldfinder and Sir Joseph Paxton bizzarres, Adonis and Glory of Stakehill byblæmens, Miss B. Coutts and Rose Hill roses. Second, Rev. F. D. Horner with Sir Joseph Paxton and Firefly bizzarres, Glory of Stakehill and Titania byblæmens, Rosy Morn and Annie McGregor roses; Firefly, Titania and Rosy Morn are all seedlings of Mr. Horner's and of great promise. Third, Mr. Moorhouse with John Brook and Sir Joseph Paxton bizzarres, Bridesmaid and George Hardwick byblæmens, Annie McGregor and Rose Hill roses. Fourth, Mr. Kitchen with Goldfinder and Sir Joseph Paxton bizzarres; Ashmole's 114 and Glory of Stakehill byblæmens, Rose Hill and Olivia roses. Fifth, Mr. Mellor with Richard Yates and Lord F. Cavendish bizzarres, Adonis and George Hardwick byblæmens, Queen of England and Hepworth's Seedling roses. Sixth, Mr. Needham with Sir Joseph Paxton and Lea's No. 2 bizzarres, Bridesmaid and Nimbus byblæmens, Lloyd's 220 and Madame St. Arnaud roses.

Class 11. *Three breeders, one of each class.*—First, Mr. Kitchen with Sir Joseph Paxton, Norval, and Annie McGregor. Second, Mr. Bentley with Lloyd's 123, Miss B. Coutts, and Glory of Stakehill. Third, Mr. Moorhouse with Sir J. Paxton, Bridesmaid, and Miss B. Coutts. Fourth, Rev. F. D. Horner with Sir J. Paxton, Glory of Stakehill, and Dawn. Fifth, Mr. Mellor with Wm. Lea, Unknown, and Queen of England. Sixth, Mr. Needham with Goldfinder, Talisman, and Mabel. Seventh, Mr. Gill with Lord F. Cavendish, Mabel, and Hepworth Seedling. Eighth, Mr. Thurstan with three seedlings.

Class 12. *Single blooms, bizarre breeders.*—First, Mr. Bentley with Goldfinder; third, with Sulphur; fourth, with Dr. Hutcheon. Second, Rev. F. D. Horner with Sir Joseph Paxton, and seventh and eighth with Storer's Seedling. Fifth, Mr. Needham with Lea's No. 12. Sixth, Mr. Cliff, Leeds, with Lord Delamere.

Rose breeders.—First, Mr. Bentley with Rose Hill; third, with Queen of England; fourth, with Mabel; fifth, with Annie McGregor; sixth, with Jackson's No. 3. Second, Rev. F. D. Horner with Dawn. Seventh, Mr. Thurstan with Tryphena. Eighth, Mr. Kitchen with Olivia.

Byblæmen breeders.—First, Mr. Bentley with Ashmole's 114; fourth, with Lloyd's 111; fifth, with W. Leech's 1. Second, third, and eighth, Rev. F. D. Horner with seedlings. Sixth, Mr. Gill with Ethel. Seventh, Mr. Kitchen with a seedling.

The prize for the best breeder in the Exhibition was awarded to Mr. Bentley for Goldfinder bizarre, exhibited in his stand of six in class 10.

In the afternoon the members of the Ancient Society of York Florists entertained the members of the Royal National Society to lunch at the White Swan Hotel, Goodramgate. Mr. A. Simpson, in the unavoidable absence of the Lord Mayor, presided, and was supported by the Rev. H. Vyvyan (chaplain to the York Society), and the Rev. F. D. Horner (President of the Tulip Society). After the loyal toasts Mr. Cooper proposed "The Visitors," which was responded to by the Rev. F. D. Horner, who warmly thanked the local Society for the wholeheartedness of the greeting and welcome they had given the Tulip Society. Mr. Thurstan also replied, and proposed "The Ancient Society of York Florists." Mr. Mackintosh in reply said that if the Tulip Society could only have given them a longer notice of their visit they would have prepared a better reception, and instead of making a donation of £10 they would have tried to have doubled that sum. A hearty vote of thanks to the Chairman, which he suitably acknowledged, terminated the proceedings.

WAKEFIELD TULIP SOCIETY'S EXHIBITION (59TH).

MAY 21ST AND 22ND.

THE genial spring weather during the earlier stages of the Tulips caused vigorous growth of great breadth and texture, and never previously did prospects of a fine display of bloom look so bright until the advent of "fickle May" dissipated the hopes of the growers. Consistent in its fickleness the month's weather became worse—sunless, rain and frost alternating, culminating with 12° of frost on the morning of the

show. Under more genial influences the blooms would have opened ten days previous, whereas the growers were in despair because they had scarcely an opportunity to examine the markings and character of the flowers, and to make matters worse the effect of the weather was a general flushing of the colours of the outside of the petals, and varieties which require full development to dissipate the unwelcome impurity of base gave much anxiety on this account.

It has been stated that the Tulip is an excellent town plant. In the ordinary sense this is correct, but it did not require an expert to distinguish the blooms produced outside the smoke radius of the City from those grown in the time-honoured "Nettle Lane" and "Eastmoor," with the immense gasometers as their too near neighbours. Upwards of 800 blooms were staged, and in spite of the season, viewed in the aggregate, the show was an imposing one. The varied colours of the rectified flowers contrasted most effectively with the indefinite yet richer coloured breeders. The stands for six rectified, six breeders, stands for threes, and single specimen classes ran eight deep in competition, and much interest was created in the awards on account of several young exhibitors pushing their way to the front of the veteran growers.

Stand of Six Rectified Tulips.—First, Mr. A. Moorhouse, with Bertha, Sir J. Paxton, King of the Universe, Masterpiece, Lizzie, Mary Jackson. Second prize, Mr. W. Mellor, with Sir J. Paxton, Lord F. Cavendish, Dauntless, Geo. Hardwick, Mary Jackson, Lizzie. Third prize, Thomas Maddock, with Sir J. Paxton, Isabella, Bessy, Lady Lilford, Aglaia.

Stand of Six Breeders.—First, Mr. W. Mellor, with Lord F. Cavendish, Sir J. Paxton, Adonis, Hepworth, Queen of England, and a beautiful rose unnamed. Second, Mr. A. Moorhouse, with Sir J. Paxton, George Hardwick, Bridesmaid, Baroness Burdett Coutts, Annie McGregor. Third, Mr. Alf. Stott, with Maid of the Mill, Adonis, Sulphur, Willison's King, Annie McGregor, Catherine.

Three Breeders.—First, Mr. A. Moorhouse; second, Mr. Lister; third, Mr. Henry Brown.

Bizarre Flamed.—First and second, Mr. Maddocks; third, Mr. A. Moorhouse.

Bizarre Feathered.—First, Mr. A. Moorhouse; second, Mr. Maddocks; third, Mr. W. Mellor.

Rose Flamed.—Mr. A. Moorhouse, first and second; third, Mr. Hy. Brown.

Rose Feathered.—Mr. A. Moorhouse, first and second; third, Mr. Geo. Gill.

Byblæmens Flamed.—Mr. A. Moorhouse, first and second; third, Mr. W. Mellor.

Byblæmens Feathered.—First, Mr. W. Mellor; second, Mr. A. Moorhouse; third, Mr. Geo. Gill.

Bizarre Breeders.—Mr. A. Moorhouse, first and second; third, Mr. Thos. Maddocks.

Rose Breeders.—First, second and third, Mr. Maddocks.

Byblæmens Breeders.—First, Mr. Thos. Maddocks; second, Mr. A. Stott; third, Mr. A. Moorhouse.

Premier Flamed.—Mr. Thos. Maddocks with Sir J. Paxton.

Premier Feathered.—Mr. A. Moorhouse with Isabella.

Premier Breeder.—Mr. Thos. Maddocks, Sir J. Paxton.

BUTLEY TULIP SOCIETY.

THE sixty-ninth Exhibition of this Society was held at the Orange Tree Inn, Butley, near Macclesfield, on May 25th. The flowers exhibited were numerous and (especially the rectified flowers) good. The chief prize at Butley is a silver cup given for the best stand of six blooms, one feathered and one flamed of each class. It was this year given by Mrs. Barlow, in memory of the late Samuel Barlow, Esq., formerly President of the Society. There was a good competition for the cup, which the Judges awarded to Mr. Charles W. Needham, Royley, Royton. His flowers were Sir Joseph Paxton, flamed bizarre; George Hayward, feathered bizarre; Elizabeth Pegg, flamed byblæmen; Elizabeth Pegg, feathered byblæmen; Triomphe Royale, flamed rose; and Heroine, feathered rose. The flowers were all good, the feathered blooms being of unusual merit. Mr. James W. Bentley was second with a good stand, comprising Sir Joseph Paxton, flamed bizarre; James McIntosh, feathered bizarre; Talisman, flamed byblæmen; Violet Amiable, feathered byblæmen; Annie McGregor, flamed rose; and Alice, feathered rose. For three breeders, one of each class, Mr. Bentley was first with fine large flowers of Dr. Hutcheon, bizarre; Glory of Stakehill, byblæmen; Rose Hill, rose. Second, Mr. W. Kitchen, Marple, with Goldfinder, bizarre; Seedling, byblæmen; Annie McGregor, rose. Third, Mr. Needham with Sir J. Paxton, bizarre; Talisman, byblæmen; Annie McGregor. In the classes for single blooms the following awards were made:—

Flamed Bizarres.

- 1, Mr. Needham with Sir J. Paxton.
- 2, Mr. Bentley with Sir J. Paxton.
- 3, Mr. Bentley with Dr. Hutcheon.
- 4, Mr. Bentley with Dr. Hardy.
- 5, Mr. Kitchen with Polpyhemns.
- 6, Mr. Jones with Sulphur.
- 7, Mr. Bentley with Lord Sidney.
- 8, Mr. Needham with Orion.
- 9, Mr. Needham with Wm. Wilson.
- 10, Mr. Needham with Richd. Yates.

Flamed Byblæmens.

- 1, Mr. Kitchen with Lord Denman.
- 2, Mr. Kitchen with Lord Denman.
- 3, Mr. Bentley with Talisman.
- 4, Mr. Kitchen with Adonis.
- 5, Mr. Kitchen with Chancellor.
- 6, Mr. Bentley with Friar Tuck.
- 7, Mr. Bentley with Lloyd's 43.
- 8, Mr. Kitchen with Prince of Morocco.
- 9, Mr. Dymock with Seedling.
- 10, Mr. Hague with Nora Creina.

Flamed Roses.

- 1, Mr. Kitchen with Mabel.
- 2, Mr. Bentley with Annie McGregor.
- 3, Mr. Bentley with Minerva.
- 4, Mr. Hague with Hepworth's 23/61.
- 5, Mr. Kitchen with Edith.
- 6, Mr. Kitchen with Bertha.
- 7, Mr. Kitchen with Rose Hill.
- 8, Mr. Kitchen with Madame St. Arnaud.
- 9, Mr. Kitchen with Aglaia.
- 10, Mr. Jones with Mary Jackson.

Feathered Byblæmens.

- 1, Mr. Jones with Bertha.
- 2, Mr. Hague with Seedling.
- 3, Mr. Jones with Bertha.
- 4, Mr. Bentley with Mrs. Jackson.
- 5, Mr. Hague with John Hart.
- 6, Mr. Kitchen with Violet Amiable.
- 7, Mr. Bentley with King of the Universe.
- 8, Mr. Dymock with Coningsby.
- 9, Mr. Needham with Adonis.
- 10, Mr. Needham with Nellie Hughes.

Feathered Bizarres.

- 1, Mr. Prescott with Lord Lilford.
- 2, Mr. Needham with Wm. Wilson.
- 3, Mr. Bentley with Jas. McIntosh.
- 4, Mr. Bentley with Robt. Guest.
- 5, Mr. Jones with Sir J. Paxton.
- 6, Mr. Prescott with Lord Lilford.
- 7, Mr. Jones with Charlie Feather.
- 8, Mr. Jones with Chas. X.
- 9, Mr. Needham with George Hayward.
- 10, Mr. Needham with Magnum Bonum.

Feathered Roses.

- 1, Mr. Prescott with Industry.
- 2, Mr. Kitchen with Alice.
- 3, Mr. Bentley with Lizzie.
- 4, Mr. Needham with Mrs. Atkin.
- 5, Mr. Needham with Comte de Vergennes.
- 6, Mr. Bentley with Heroine.
- 7, Mr. Jones with Modesty.
- 8, Mr. Prescott with Mrs. Collier.
- 9, Mr. Needham with Dr. Vernon.
- 10, Mr. Dymock with Mabel.

BREEDERS.

Bizarres.

- 1, Mr. Prescott with Sulphur.
- 2, Mr. Prescott with Sir J. Paxton.
- 3, Mr. Hague with Wm. Wilson.
- 4, Mr. Hague with Dr. Hardy.
- 5, Mr. Bentley with Goldfinder.

Byblæmens.

- 1, Mr. Bentley with Martin's 117.
- 2, Mr. Hague with Janette.
- 3, Mr. Bentley with Wm. Parkinson.
- 4, Mr. Hague with Martin's 117.
- 5, Mr. Jones with Adonis.

Roses.

- 1, Mr. Bentley with Rose Hill.
- 2, Mr. Bentley with Annie McGregor.
- 3, Mr. Hague with Mrs. Barlow.
- 4, Mr. Bentley with Miss B. Coutts.
- 5, Mr. Bentley with Queen of England.

The extra prize for the best feathered flower was awarded to Mr. Needham for the splendid bloom of Elizabeth Pegg in his stand of six, and the best flame was adjudged to be Lord Denman, shown by Mr. Kitchen. After the judging, the members and friends dined together. Mr. Bentley, the President of the Society, presided.



FRUIT FORCING.

Vines.—Early Houses.—Where Grapes are hanging afford sufficient water to the inside borders to maintain the soil in a moist condition. No injury will result to the Grapes provided the atmosphere is not stagnant, but air must be given more or less constantly. When the Vines are cleared of ripe fruit the foliage should be cleansed of dust and red spider, employing tepid water, and, if necessary, an insecticide, as keeping the foliage clean and healthy to the last is important for aiding the formation of the buds for another season. The leaves being fresh and clean, keep the laterals in check by pinching, yet if there be anything defective with the principal foliage a little freedom may be allowed to the laterals.

Houses with the Fruit Swelling.—Although fires cannot be dispensed with at night and on cold dull days, much may be done in economising fuel by closing early on fine afternoons, but it must be accompanied by plenty of atmospheric moisture, avoiding a constantly saturated atmosphere by a little ventilation at night and increasing it early in the morning. Nevertheless, a moist atmosphere is essential to the swelling of the berries, and it should be secured without stagnation by damping the floors and borders two or three times a day—in the morning, at closing time, and before nightfall. Do not allow the laterals to grow so as to crowd the principal leaves, but keep them well in hand. Where, however, there is plenty of space, they may be allowed to extend, yet not so as to necessitate their removal to a great amount later on. The temperature should be maintained at 65° at night, or a few degrees less on cold nights, 70° to 75° by day, and 80° to 85° from sun heat, allowing an advance to 90° after closing, or early in the afternoon.

House with the Grapes Ripening.—Allow a constant and liberal supply of warm rather dry air, but a genial condition of the atmosphere is necessary for the benefit of the foliage, yet the air moisture must not be excessive or stagnant, or it will prejudice the ripening. Do not neglect to supply water at the roots, and if nourishment is given it should be of a sweet nature, or the Grapes may be tainted, as they are with late applications of soot and other organic matter. If a light mulching of short sweet litter be applied it will tend to a more equable moisture at the roots. A good heat is necessary to insure the highest quality; indeed there is no comparison between Grapes that are properly

finished in a rather warm and well-ventilated atmosphere and those ripened in a low and moist temperature.

Grapes Scalding.—Muscats and other varieties completing the stoning should be carefully watched in hot bright weather, and in case of scalding air must be admitted more freely or until the colouring commences. At that period all danger will be past as regards the black varieties, but Muscat of Alexandria will scald when well advanced in colour, and it is necessary in houses glazed with large panes of glass to employ a slight shading, as that of herring netting, over the roof-lights in very bright periods. It is essential, however, that these Grapes be otherwise well exposed to light. With Hamburgs and black Grapes generally it is different; they colour best beneath a good spread of foliage, and it is one of the best means of avoiding scalding, provided the supply of air be bountiful by day and a little ventilation left on constantly at the upper part of the house with a genial warmth in the hot-water pipes. A temperature of 65° to 70° by artificial means suffices, or a little less for Hamburgs.

Late Grapes.—Where the Vines are in flower a constant supply of dry warm air will further a good set of fruit, the temperature being kept at 70° to 75° by artificial heat, and rising to 80° or 90° with sun. Thin the berries freely immediately they are set, but this, in the case of the shy setters, must be confined to the removal of the smallest and imperfect berries in the first instances, deferring the general thinning until the properly fertilised ones can be determined by their free swelling. There must not be any deficiency of moisture at the roots, therefore afford liquid manure copiously after the Grapes are thinned and swelling, or a top-dressing may be given of some approved fertiliser, distributing it evenly over the surface and wash in moderately. If the weather be dry and the soil light outside borders will need watering, affording liquid manure or top-dressings of chemical manures if the Vines are not very strong or are carrying a full crop.

Young Vines.—Those in pots for next year's fruiting should have the leading shoot or cane stopped at 8 to 9 feet, and the laterals or sub-laterals pinched at one leaf as produced. Supernumeraries in recently planted houses should also have the canes stopped at the length named, the laterals and sub-laterals being closely pinched. This will concentrate the energies of the Vines on the principal leaves and buds, and is necessary for those intended to fruit next season. The permanent Vines, however, may be allowed to make all the growth there is room for, but it is a mistake to encourage growth by over-stimulation and an excessively humid atmosphere, but growth should be accelerated by closing the house early on fine afternoons, admitting a little air before night, and increasing it early in the morning of fine days. When young Vines become established they will require abundance of water at the roots, yet avoid making the soil sodden by needless applications, and sprinkle surfaces two or three times a day so as to maintain a genial condition of the atmosphere.

Cherries.—The crop being now ripe consideration must be given to keep them fresh so as to prolong the season. Shading will effect that, but it is undesirable where the fruit is not exposed directly to the sun, otherwise it will be necessary to have recourse to it. Only light material, as hexagon netting, should be used. Free ventilation must be attended to, and in warm weather a sprinkling of the surface of the border in the hottest part of the day will assist in keeping the fruit plump. The roots must not be neglected for water, as dryness is inimical to the foliage, and on the preservation of this in health depends the proper formation of the buds for the ensuing crop of fruit.

Figs.—Early Forced Planted-out Trees.—The fruit now ripening must be kept from damp throughout the whole of the process, affording a free circulation of warm dry air, and a night temperature of 65° to 70°, 75° to 80° by day, and with sun heat 80° to 90°. Figs ripened in a close moist atmosphere and in shade are insipid, but those perfected in full exposure to light and a favourable atmosphere are wholesome and nutritious. If a circulation of air be afforded constantly there will be little danger of "spot;" but if it should appear promptly remove the affected fruit, and burn it. If red spider become troublesome during the ripening it is a good plan to gather all the fruit about ripe, or sufficiently to do so perfectly in an airy fruit-room, and then give the trees a forcible syringing, directing the water against the under side of the leaves, so as to dislodge the insects and break their webs. If clear water be used and air admitted rather freely it will not interfere with the ripening of the fruit remaining. By pursuing this treatment the pest may be kept under subjection until the fruit is gathered, when it can be destroyed by forcible syringing and the use of an insecticide. Scale should be removed with a brush and a softsoap solution, or some other approved preparation.

Second-crop Figs.—The trees require generous treatment to swell the second crop. Syringe twice a day to keep red spider in check, and afford liquid manure when watering is necessary. Trees in pots require supplies of liquid nourishment twice a day in hot weather and generally once; those in borders need supplies once or twice a week according to the vigour of the trees and the extent of the rooting area; others in restricted areas of limited extent requiring it more frequently than those in large borders. The second crop must be thinned where thickly set before the Figs are the size of pickling Walnuts, and in thinning reserve the largest fruits at the base of the shoots.

Young Trees for Next Season's Forcing in Pots.—Those coming on for early forcing must not be neglected, affording all the light possible and keeping as near the glass as consistent with their growth. Syringe well and supply liquid manure so as to secure a sturdy growth, and when that is complete they may be placed outdoors in a sunny corner

to induce rest. They must not, however, be dried off, but have proper syringing and due supplies of water, and if the wood be soft the trees should be kept under glass until it is thoroughly ripened.

Cucumbers.—*Houses.*—The weather has been very bright and the winds cold and sharp, rendering careful attention to ventilation imperative. It is a good plan to turn the heat off when the temperature is 75° on sunny mornings, and keep it off all the day, only using it to maintain a temperature of 65° to 70° at night, and 70° to 75° on dull days. This will lessen the necessity for air-giving and shading, which must be had recourse to when necessary to prevent flagging. Permanent shading is only desirable where no ventilation is given, then the greatest danger is about 4 to 5 P.M. with span-roofed houses facing the east and west, and whitewash is generally employed on the latter side of the house. Go over the plants frequently for stopping the growths, cutting out old ones and thinning where likely to become crowded. Liquid manure will be required two or three times a week, but top-dressing of chemical manures may be used between times with advantage. Maintain a good moisture by sprinkling surfaces as they become dry. Where straight fruits are required glasses should be used.

In Frames.—Still continue night coverings and attend to the lining of the beds, as a good bottom heat is one of the best means of securing healthy root action and vigorous growths. Keep the growths fairly thin, and close sufficiently early to run up to 90° or 100°, sprinkling the plants lightly at closing time. Supply water at the roots as required, and always in a tepid state.

THE KITCHEN GARDEN.

Runner Beans.—In many gardens the early sown rows of these were badly crippled by frosts on and about May 21st, but if sown thickly there may yet be enough plants left. They transplant readily, and if some have been raised in boxes or can be spared from among those to be reserved in the rows, many blanks may be filled or even whole rows formed with these. They ought to be put out or thinned to not less than 8 inches asunder, two plants at the most going to each tall pole or stake, and only one to short ones. Crowding Runner Beans is quite a mistake. Should there still be an insufficiency of rows, and the crop is a very important one, sow more seed at once, letting the plants have the benefit of a deep and rich root run. Any that are to be grown without stakes must be kept well pinched back. Once allow them to form much running growth, and they are soon of no further service. It pays well to protect Runner Beans with canvas, mats, branches of trees and such like, whenever frosts are imminent, and they are liable to be damaged up to the middle of June.

Beet.—Apparently frosts did not injure the rows of Beet, but good progress has not been made either before or after the frosts. The roots obtained by dibbling out the thinnings when these are large enough to move are not good; but they are serviceable at times, and, at any rate, it is better to transplant a few than have unsightly blanks in the rows. Select showery weather if possible for this work, and if this cannot be waited for, water the rows overnight, and next day further save the tap roots by loosening the ground with a pointed stick according as the plants are drawn. In dry weather give these newly moved plants water occasionally, and they will then soon take to their fresh quarters. It will be found that the Turnip-rooted forms succeed better after transplanting, than do the long rooted varieties. It is these also that are the most likely to attain a serviceable size if sown at this comparatively late date. If Beet are left from 8 inches to 10 inches asunder in the rows they will become quite large enough, coarseness usually proving very objectionable.

Carrots.—Directly the rows of these are well defined the flat hoe should be used between the rows, and if slugs are destroying the plants dust soot and lime freely over the beds while yet damp from dew or rain. It is from the outsides that the slugs principally start and return to. Carrots transplant badly, and if there are many gaps or failures the best way out of the difficulty is to sow more seed of Nantes Horn, Model, or other fairly large, quick-growing variety. If this is done at once, the thinnings will be very acceptable for use late in the summer, while the rest will become quite large enough for storing late. Thin Carrots in showery weather if possible, and before they begin to spoil each other; not severely at first, and later on almost daily, or according as the tender young roots are wanted for use. The Horn varieties should be eventually left about 4 inches apart, and the rest from 6 inches to 8 inches asunder, coarseness in this case, again, not answering well.

Chicory, Salsafy, and Scorzonera.—Stir among the rows of these occasionally with the Dutch hoe, and thin while yet the plants can easily be drawn. Large roots of Chicory are desirable, therefore leave the plants 9 inches asunder in the rows. Thin Salsafy to a distance of about 8 inches, and Scorzonera 10 inches asunder.

Onions.—These appear to have come up well in most gardens. If, however, there are any blanks fill these by transplanting at once. They move readily when comparatively small, and only very indifferently when near the size round of a quill pen. If the rows are disposed 12 inches apart and the seed was sown thinly in rather wide drills, very little thinning out will be needed. The less the ground is loosened by drawing out plants the less likely are Onion maggots to be plentiful. Unless wanted extra large—and medium-sized to small roots are the most serviceable—leave the plants about 4 inches asunder, and if the roots eventually press against each other they are all the more likely to finish well. If fine roots are desired then thin to 6 inches. Sow soot freely among and over the plants in showery weather, and which is

also the best time for sowing chemical manures of any kind among the rows, being careful that they do not lodge on the plants, or otherwise many of them may be crippled. Hoe the ground lightly after manuring.

Parsnips.—Very large Parsnips are only desirable for exhibition purposes. It is the medium-sized roots that keep and cook best, and if these are wanted avoid over-thinning. Very good Parsnips can be had by leaving the plants 9 inches apart, and 12 inches will give large roots. Parsnips may be transplanted with a view to filling blanks, but the roots thus obtained are usually short.

Turnips.—If the earliest sown rows of Early Milan are only lightly thinned, or so as to leave the plants well clear of each other, further thinning may be done according as the roots resemble over-grown Radishes, at which size they can be used. The Snowball and other larger topped varieties to be early thinned to about 9 inches apart in the rows. Sow more seeds in rather cool quarters, as Turnips do not keep good long during hot weather.

Potatoes.—Those not moulded up before the frosts caught them will have been given a far more serious check than those that had a portion of their stems thus protected. These latter will branch out again quickly; but those frozen down to near the planting tubers will never properly recover. Hoeing deeply or "hacking" among the rows has a most beneficial effect. Not only does it destroy many weeds, but it also lets in air and warmth to the roots. This should be done, and also soot or chemical manures sown between the rows well in advance of heavily moulding up the plants. Potatoes that have not been greatly weakened by the loss of one or more sets of sprouts may yet be planted on free working ground with every prospect of remunerative crops being had.

Tomatoes.—The first week in June ought to see most of the planting of Tomatoes done. Many plants are already out, but unless protected during frosty nights will have fared badly. In any case very little progress is made while yet the ground as well as the nights are cold. Comparatively young plants, or those only just showing their first bunch of flower, if duly hardened prior to planting out, will most probably surpass much older ones. Tomatoes may be grown against sunny garden walls and fences, and high walls of plant houses and forcing pits. If there is not sufficient head room to admit of their being trained uprightly, then lay them in obliquely. When plants are abundant arrange them 1 foot apart, and allow no side shoots to develop; but if somewhat scarce they may be disposed either 2 feet or 3 feet asunder, laying in one or two side branches accordingly. A very rich soil is undesirable, but they will require one or two good shovelfuls of fresh loamy soil, with a little solid or artificial manure added per plant. In the event of the soil proving very hard or poor substitute quite fresh compost, a trench 2 feet wide and 1 foot in depth filled with new soil answering well; so also would a raised or temporarily formed border on a hard bottom. Wooden screens might be formed where there is an insufficiency of wall space available.

During such seasons as that of 1893 Tomatoes succeed remarkably well quite in the open. In this case select a sunny yet sheltered border (they might be planted among early Potatoes), dispose the plants 2 feet asunder, and place a 4 feet stake to each. See that all are in a moist state at the roots previous to planting, and keep the old balls of soil and roots moist till such time as the roots have taken full possession of surrounding soil.



APIARIAN NOTES.

CHLORIC DROPSICAL FEVER.

FURTHER strong microscopic investigations with the above disease in bees reveal nothing more but smaller cells in every way similar to those seen with lower powers. In one instance only there appeared an object rounded at the posterior, but otherwise in formation not unlike that of a shrimp. Hives attacked with the disease are those fed with sugar from the foundation and others having honey only. Probably the disease is hereditary through the perpetuation of spores, which develops at any time when exciting causes are present, perhaps from pollen of certain plants, or it may be from water impregnated with something favourable to its development. If I can trace anything definite as to the cause I will report, but meanwhile leave it with the above suggestions to abler persons for a solution.

BROOD DRAWING.

My time has been wholly occupied with one thing during the past week—viz., to prevent brood drawing. The only remedy is feeding, even to hives not in want. One hive I have never fed for the past twelve years had to be supplied with syrup. Last year at the same date every hive had a surplus of honey, and in several cases in fruit districts they had 100 lbs. This year the reports say, "Hives are very light; we shall have to feed."

Two weeks ago there appeared in a local journal an article from

a well-known bee-keeper saying it was "the best season for bees he ever experienced," but this does not concur with many others. Unless hives are kept breeding, and brood drawing prevented, there will be little chance of the bees gathering honey to any great extent should the weather prove favourable during the next two or three months.

WHY SWARMS GATHER MOST HONEY.

When a swarm issues it is composed mostly of bees fit for outdoor work. We must, however, take the case of swarms which issue in a properly and in a natural way—i.e., all the "ripened" bees leaving, for it sometimes happens many of such bees either do not leave the hive or return to it. In these cases the swarm is less than it should have been, and cannot make the same progress as one that is complete. When such a swarm comes off at the time of a honey flow the whole of the bees set to work with a will. New combs are mostly built during the night; and if foundation or clean empty combs exist, the bees of such swarms gather more honey than the stock hive did before swarming, and will continue to do so for about ten days after. Swarms are always more active and anxious to gather honey than unswarmed ones; they work earlier, later, and more persistent during midday. Then what is stored in their hive or supers is free from taint, and of the greatest purity, which stocks cannot produce.

The bees left behind in the stock hive are mostly nurse or young ones. Some are intent on gathering pollen outside, few honey gatherers being left. By-and-by, as the stock hives brood is hatched and all surplus queens deposed, the bees become equal to those of the first swarm, and with the additional breeding space and the young queen of the stock hive in from four to five weeks the bees will be doubled in numbers. I trust the reader will not confound the foregoing practice as being on the same lines as removing queens at the commencement of the honey harvest, which is a foolish method, and ought not to be done by anyone expecting best results.

THE WEATHER AND BEES.

At present the season is far from being promising, but it ought to be remembered that in some of our best honey years the stock of unswarmed hives had to be fed up till the last week of June. The Heather has made little if any progress since beginning of April, so that it will be much later this year, and if it turns out a wet June and July the bloom will be very inferior. Although no one can tell what the future is to be, we know the effect the past has had on vegetation, and it will be little short of a miracle should the flowers be profuse and early. September has in some years given us the finest weather, so that may be again. Still, taking everything into consideration, it will be as well to limit the increase of hives, bearing in mind swarms always work best.

The weather has slightly improved, and should it continue hives will rally, but do not forget the fact that already queens have bred as much as they do till the close of the season in some years. Youthful fertile queens on hand should be the watchword of every bee-keeper.—A LANARKSHIRE BEE-KEEPER.



* All correspondence should be directed either to "THE EDITOR" or to "THE PUBLISHER." Letters addressed to Dr. Hogg or members of the staff often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post, and we do not undertake to return rejected communications.

Grubs on Apple Blossoms (E. S.).—The "grubs" are the pupæ of the Apple-blossom weevil (*Anthonomus pomorum*), as you have rightly anticipated. The affected flowers should be forthwith shaken down, previously spreading sheets on the ground beneath the trees and the faded blossoms collected and burnt. There must be no delay, indeed the work of removing the faded flowers and grubs has been deferred too long; but "better late than never."

Tomatoes Discoloured (D. M.).—The plant was so shaken about, bruised, and covered with adhering particles of soil that it was not easy to examine. It appears to be in a succulent state through being grown in too free and light soil, also in a too close and moist atmosphere. Firm the soil, do not over-water, provide heat to enable free ventilation, yet avoiding cold sharp currents of air, and the plants will become firmer in texture and the better resistant of fungoid attacks. In other words, we think they are recoverable by cultural means, but if this is not so you may spray with Bordeaux mixture made as advised last week. It should be of a blue tint; if brown it may injure the plants.

Vine Lateral Discoloured (J. H.).—Has not the injury to the lateral been caused by abrasion or by contact with rough or galvanised wire? The dying of the extreme end is the result of removing the leaf above it and the appropriation of the sap by the leaf below. Your method of stopping seems peculiar, judging at least by the specimens before us, for you have taken off the points of the laterals just under the leaf at the first joint above the bunch, instead of just above the leaf in each case. Returning to the injury, we suspect if you had taken the matting round the wire before bringing the lateral against it there would have been no corrosion. The Vine appears healthy, though some of the leaves are a little scorched, as if the house had been left closed too long on some sunny morning after a cold night.

Gloire de Dijon Rose Failing (W. J. I.).—There is nothing that is suggestive of the tree being "doctored" in the soil submitted. Of course its actual contents can only be determined by an exhaustive analysis, but we do not undertake such work. The soil is formed into nodular masses by the growth of some fungus, which in the absence of spores we are unable to determine satisfactorily, but it has the general appearance of canker-fungus, but different from that of the Apple and Pear, and rarely attacks Roses or other plants above the soil. If the plant dies, as we apprehend, you might forward a portion of the diseased roots or of the canker on the root stem, a fair specimen of the affected roots packed in damp moss sufficing. The "substance" should be cleared away and burned, and the soil for a considerable distance from the stem outwards watered with soluble phenyle, using a teacupful or quarter of a pint to a pail of water, and that quantity per square yard. If the plant dies, or the roots are in part dead, these must be removed from the soil. This attended to, and the plant not too far gone, it will possibly recover from the attack, and grow vigorously.

Tomato Leaves Blackened and Spots on Fruit (Cross).—1, The leaves have the appearance of being affected with the Potato disease, but there are no outgrowths, and the sections do not reveal the mycelium of the parasite. The hairs are, however, very much distorted, and the mycelium may be pervading the tissues, as these being opaque it is not easily detected in the early stages of the disease. It would be advisable to remove the discoloured portions of the leaves and keep the house rather warm, but with a free amount of top ventilation, maintaining a rather dry condition of both the soil and atmosphere. It is of little use spraying either Tomatoes or Potatoes with sulphate of iron solution as a preventive of the disease. Bordeaux mixture is the approved antidote, and has been given repeatedly in this Journal (see page 419, last week). It must not be used after the fruit is the size of that you sent, or it will adhere and possibly prove dangerous. 2, The "spots" on the fruit may have been caused by some injury to the cells; at least, they are ruptured, and that causes the depressed patches. It would be advisable to remove and burn such fruits, for they will have a scabby appearance when ripe and not be saleable. If you find any increase of the malady spray at once with Bordeaux mixture, enveloping the fruit half grown or more in paper bags, and remove them after the spraying.

Currant Bud Mite (Yorkshire).—The branches sent indicate a virulent attack of the destructive pest *Phytoptus ribis*, known as the Currant bud or gall mite. It is extremely minute, but when numerous, as in your case, ruinous to bushes and plantations. When the knotted buds are few, they are picked off early in the season by women or children, and burnt; the bushes, when leafless, being dressed with a solution of sulphur and lime. In Miss Ormerod's "Manual of Injurious Insects," Mr. Arthur Bull, of Cottenham, writes:—"I use a dressing of two parts sulphur and three parts lime boiled together in water (2 lbs. sulphur and 3 lbs. lime, 3 gallons water), which is further diluted at the rate of 2 or 3 pints to a large pail of water, applied with a syringe to the infested bushes; the effect is to keep the 'spider' down, and that little or no damage is done. It seems difficult to clear the garden altogether." To this Miss Ormerod adds:—"Another recipe, to save the trouble of boiling the lime, is as follows:—Take of sulphuret of lime 4 ozs., and of soft soap 2 ozs., to each gallon of hot water; the soap and sulphuret to be well mixed before the addition of the water, which is to be gradually poured on, stirring being continued during the process. This mixture may be used as a syringing, but if poured in thick condition on the stems about a foot or two from the ground and let run down into the centre of the bushes it would choke myriads of the minute creatures. Good waterings, and all treatment calculated to promote hearty growth, would be likely to be of service. Where an attack is established, probably the best treatment is to clear the bushes and burn them (as well as any rubbish lying on the surface of the ground) where they stood, or to put a couple of shovelfuls of fresh gas-lime where each bush stood, so as to kill the mites that may remain. They cannot fly, but are easily dispersed on leaves blown by the wind, or by crawling. Change of crop to something that the gall mites will not attack is obviously desirable where there has been infestation."

Bordeaux Mixture (J. M.).—The mixture must be well stirred, and used, as you say, in a "cloudy" state. Only sufficient must be made for use at once. To be safe and effectual it must be fresh and of a bluish colour; if old and brown it may do more harm than good. It may do some good in your case, but ought to have been applied weeks ago. It is a preventive of fungoid growth in the tissues of plants; when the enemy takes firm possession it is for the time being master of the position, but the dressing will check the production of spores for future devastation.

"Scum" on Gravel Path (C. P.).—The "scum" is a plant, one of the Cryptogamia, and has a general resemblance to *Marchantia conica*. It seems to have a remarkable power of increase in moist places, and delights in the mineral matter reduced by atmospheric influences or the application of chemicals, provided there be plenty of moisture. We have found carbolic acid effectual in killing the *Marchantia* named on a shaded gravel path, using 1 oz. of the acid to a gallon of water, or the carbolic acid powder sprinkled on the walks, similar to salt, will also kill the liverwort.

Roses Attacked by Orange Fungus (H. H.).—The Rose leaves are badly infested with the Rose "rust" fungus (*Lecythea rosæ*) or uredo stage of the Rose "brand" (*Phragmidium mucronatum*). It is caused by the spores of the fungus alighting on the leaves, germinating, and pushing their germinal tubes through the stomata or directly piercing the epidermis, thus gaining access to the tissues, upon which the fungus lives and permeates by the mycelium, from which spring the reproductive bodies (spores), and produce the orange coloured patches. The remedy is to spray the bushes with Bordeaux mixture, for preparing which a suitable formula was given in last week's *Journal of Horticulture* in reply to "J. C. C." (page 419). By continuing to pick off and burn the worst leaves you will get rid of much of the disease; but also aid the distribution of the spores unless the picking is done very carefully. Spraying is the best thing, and it should be attended to at once, coating the bushes with the finest possible film of the mixture, but thoroughly in every part, repeating in ten days or a fortnight.

Treatment of Old Bouvardias (B. H.).—Old plants that have been cut back and have started into growth should have their old roots partially reduced and repotted in fibry loam, a seventh of manure, and sand. Place them in a cold frame and keep close until rooted. Stop any shoots that take the lead as they require it, in order to keep the plants bushy. After they have commenced active growth they can be grown under cool-frame treatment, or be plunged outside in their pots, or planted out in a warm sheltered position; the latter, in favourable localities, being an admirable practice. Young stock rooted early are now established in small pots, and the points of the shoots must be pinched out when three or four joints of wood have been made. Give more air than has been necessary up to the present time in order to have a firm sturdy growth. These can either be placed when ready in their flowering pots, or planted out and treated like the old stock. Those only just rooted should be grown on in pots in heat for some time yet, and if then placed in cooler quarters will make valuable plants by winter.

Pears and Plums for Wall Case (H. K. W.).—The failure of the Peaches and Nectarines on the wall is probably due to your growing Tomatoes to your "heart's content" in the front next the glass. We have known other such failures, and it did not occur to the grower that, if the Peaches and Nectarines had been given the same chance as the Tomatoes, they would have succeeded. We mention this, because you will not succeed any better with the Plums and Pears on the wall with the Tomatoes occupying the best and only suitable place for growing anything in the way of fruit satisfactorily. Pears—Beurré d'Anjou, Beurré Baltet Père, Beurré Superfin, Doyenné du Comice, Pitmaston Duchess, Louise Bonne of Jersey, and Marie Benoist. Plums—Denniston's Superb, Jefferson, Early Transparent Gage, McLaughlin, Kirke's, Golden Transparent, and Coe's Golden Drop. Cherries succeed well, Early Rivers and Black Tartarian being good varieties. The Peach case may possibly be removed without injury, but that will entirely depend on its construction, of which we can form no opinion. The Pears and Plums may be planted alternately. It would be far better to plant the trees in front and train them to a trellis about 1 foot from the glass, having the Pears as cordons, about 2 feet apart.

Pear and Peach Leaves Blistered (G. F.).—The blister on the Pear leaves is caused by an attack of the Pear leaf mite (*Phytoptus pyri*). The infection will continue to spread, especially on the young growth, unless arrested by spraying with Paris green, 1 oz. to 20 gallons of water. As this is a dangerous poison, and you may not have a spraying machine, you may use sulphide of potassium, half ounce to a gallon of water, and apply with a fine-rose syringe, directing the spray against the under side of the leaves. The worst affected leaves may also be removed and burned, but this must be carried out carefully, or the tree will suffer more from the loss of foliage than from the mites. The leaves and shoots of the Peach are affected with Peach blister, which makes its presence manifest by the curled, blistered, thickened and distorted appearance of the affected growths. It is the work of a fungus (*Exoascus deformans*), and may be prevented to a great extent by efficient protection from cold cutting winds, preferably by glass copings, with canvas in front. The best remedy is to remove the worst infested leaves and young shoots, doing this gradually so as to remove the whole by degrees, and as the weather gets warmer the trees will grow out of the disease, and produce healthy shoots and leaves.

Names of Plants.—We only undertake to name species of plants, not varieties that have originated from seed and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in firm boxes. Slightly damp moss, soft green grass or leaves form the best packing, dry wool the worst. Not more than six specimens can be named at once, and the numbers should be visible without untying the ligatures, it being often difficult to separate them when the paper is damp. (W. H.).—1, *Ceanothus dentatus*; 2, *A. Helianthemum*, flowers withered, possibly *venustum*; 3, *Asphodocus luteus*; 4, *Valeriana officinalis* (common red Valerian); 5 and 6, totally insufficient. (A. H. F.).—1, *Pyrus Aria* (Beam Tree); 2, *Ornus europæus* (Manna Ash); 3, *Staphylea pinnata*; 4, *Cratægus pyracantha*; 5, *Cerasus* (*Prunus*) *padus* (Bird Cherry); 6, *Ledum palustre*. (*Ignoramus*).—1 and 2, forms of *Valeriana dioica*; 3, *Saxifraga granulata* fl. pl.; 4, *Cardamine pratensis* fl. pl.; 5, *Gentiana acaulis*; 6, *Veronica prostrata*.

COVENT GARDEN MARKET.—MAY 30TH.

TRADE more brisk, the market being readily cleared at better prices.

FRUIT.

	s.	d.	s.	d.		s.	d.	s.	d.
Apples, per bushel	2	6	to	10	0	Plums, per half sieve ..	0	0	to 0 0
Ta-manian, per case	8	0	12	0	0	St. Michael Pines, each ..	2	0	6 0
Grapes, new, per lb.	2	0	3	0	0	Strawberries per lb., morn-			
Lemons, case	10	0	15	0	0	ing gathered	1	0	5 0
Peaches, per doz.	6	0	18	0					

VEGETABLES.

	s.	d.	s.	d.		s.	d.	s.	d.		
Asparagus, per bundle ..	2	0	to	5	0	Mushrooms, punnet	0	9	to	1	0
Beans, Kidney, per lb. ..	1	0		1	3	Mustard and Cress, punnet	0	2		0	0
Beet, Red, dozen	1	0		0	0	Onions, bushel	3	6		4	0
Carrots, bunch	0	3		0	4	Parsley, dozen bunches ..	2	0		3	0
new, bunch	0	9		1	0	Parsnips, dozen	1	0		0	0
Cauliflowers, dozen	1	6		3	0	Potatoes, per cwt.	2	0		4	6
Celery, bundle	1	0		1	3	Salsafy, bundle	1	0		1	5
Coleworts, dozen bunches	2	0		4	0	Scorzouera, bundle	1	6		0	0
Cucumbers, dozen	1	6		3	0	Shallots, per lb.	0	3		0	0
Endive, dozen	1	3		1	6	Spinach, bushel	1	6		3	6
Herbs, bunch	0	3		0	0	Tomatoes, per lb.	0	6		1	0
Leeks, bunch	0	2		0	0	Turnips, bunch	0	3		0	4
Lettuce, dozen	0	9		1	0	new, bunch	0	8		0	10

AVERAGE WHOLESALE PRICES.—OUT FLOWERS.

Orchid Blooms in variety.

	s.	d.	s.	d.		s.	d.	s.	d.
Arum Lilies, 12 blooms ..	1	6	to	3	0	Mignonette, 12 bunches ..	3	0	to 6 0
Azalea, dozen sprays ..	0	4	0	6	0	Narciss, various, doz. bnchs.	2	0	4 0
Bouvardias, bunch	0	6	1	0	0	Orchids, per dozen blooms	1	0	9 0
Carnations, 12 blooms ..	0	9	1	6	0	Pæonies, dozen bunches ..	6	0	15 0
Cornflowers, doz. bunches	2	0	4	0	0	Pausies, dozen bunches ..	1	0	2 0
Eucharis, dozen	2	0	4	0	0	Pelargoniums, 12 bunches	6	0	9 0
Gardenias, per dozen ..	1	0	4	0	0	Pelargoniums, scarlet, doz.			
Iris, dozen blooms	1	0	2	0	0	bunches	3	0	6 0
Lilac (French) per bunch	2	6	4	0	0	Primula (double), dozen			
Lily of Valley, doz. sprays	0	6	0	9	0	sprays	0	6	1 0
doz. bnchs.	4	0	8	0	0	Pyrethrum, dozen bunches	3	0	6 0
Lilium candidum, dozen						Roses (indoor), dozen ..	0	6	1 0
bunches	12	0	18	0	0	Tea, white, dozen ..	1	0	3 0
Lilium candidum, dozen						Yellow, dozen	2	0	4 0
blooms	0	6	0	9	0	Roses (French), per dozen	1	0	2 6
Lilium longiflorum, per doz.	2	0	4	0	0	Roses, Safrano (English),			
Maidenhair Fern, dozen						per dozen	1	0	2 0
bunches	4	0	6	0	0	Roses, Maréchal Niel, per			
Marguerites, 12 bunches ..	1	6	4	0	0	dozen	1	6	5 0
Moss Roses (French), doz.						Stephanotis, dozen sprays	1	3	3 0
bunches	4	0	9	0	0	Tuberose, 12 blooms ..	0	4	0 6
Myosotis or Forget-me-						Wallflowers, doz. bunches..	2	6	4 0
nots, dozen bunches ..	1	6	3	0	0				

PLANTS IN POTS.

	s.	d.	s.	d.		s.	d.	s.	d.		
Arbor Vitæ (golden) dozen	6	0	to	12	0	Hydrangea, per dozen	..	9	0 to 18	0	
Arum Lilies, per dozen	..	6	0	12	0	Ivy Geraniums	.. ..	5	0	8	0
Aspidistra, per dozen	..	18	0	36	0	Lilium Harris, per dozen	15	0	30	0	0
Aspidistra, specimen plant	5	0	10	6		Lobelia, per dozen	.. ..	4	0	6	0
Cineraria, per dozen	..	4	0	6	0	Lycopodiums, per dozen	..	3	0	4	0
Dracæna terminalis, per						Marguerite Daisy, dozen	..	6	0	12	0
dozen.. ..	18	0	42	0		Mignonette, per doz...	..	6	0	9	0
Dracæna viridis, dozen	..	9	0	24	0	Musk, per dozen..	.. ..	4	0	6	0
Ericas, per dozen	..	9	0	24	0	Myrtles, dozen	.. ..	6	0	9	0
Euonymus, var., dozen	..	6	0	18	0	Nasturtiums, per dozen	..	1	6	6	0
Evergreens, in var., dozen	..	6	0	24	0	Palms, in var., each	..	1	0	15	0
Ferns, in variety, dozen	..	4	0	12	0	(specimens)	.. ..	21	0	63	0
(small) per hundred	4	0	8	6		Pelargoniums, per dozen..	..	6	0	15	0
Ficus elastica, each	..	1	0	7	6	scarlet, per doz.	..	4	0	6	0
Foliage plants, var., each	..	2	0	10	0	Roses, various, per dozen..	12	0	36	0	0
Fuchsia, per dozen	..	6	0	9	0	(Fairy), per dozen..	..	9	0	12	0
Genista, per dozen	..	6	0	12	0	Spiræas, per dozen	..	6	0	12	0
Heliotrope, per dozen	..	5	0	8	0	Stocks, per dozen	.. ..	3	6	5	0

Roots in variety for planting out, in boxes or by the dozen.



TILLAGE.

USEFUL lessons abound all over the farm now while the crops are in full growth, lessons which, if well understood, have a beneficial influence upon subsequent practice. Of these the

effect of soil cultivation upon crops is the most important, because without sound tillage other work cannot tell upon the final result as it ought to do. The general conception of what sound tillage is appears to be vague, indefinite, and fanciful in the extreme. It may be that this is so because common rules of practice are not applicable to all soils, yet the general principle, the reason why of the matter, holds good everywhere, and it is deplorable that discussions of it so frequently puzzle plain men instead of helping them.

By common consent good mixed soil is regarded as the best land a farmer can have. It is a deep loam, having thorough natural mechanical division in the guise of small pieces of stone, gravel or flint, well mixed with the soil, with perfect under drainage, so that water filtration and air circulation can never sustain any serious check in it. A deep tilth, a fine seed bed, an even distribution of fertility to a considerable depth, early sowing, speedy seed germination, a full plant, robust growth, free root action, early development, abundant crops, are some of the special advantages which such soil affords under good management. Taken, therefore, as a standard of excellence, the general aim should be to bring other soil as near to its condition as may be possible without having to incur an unreasonable outlay. This should determine the point as to whether soil is or is not worth cultivating. There is undoubtedly a limit to profitable tillage, bounds which cannot be passed with impunity. Outside those bounds lie extravagant and careless tillage—wild, thoughtless expenditure, slovenly practice, often a mere following of custom.

Inside them assuredly much soil improvement is possible. That of heavy land, by drainage always in conjunction with liming, heavy dressings of burnt clay, slag, ashes, gravel, road, or river sand—anything available to impart mechanical division. Once have this well done, then improvement in soil condition, and the crops growing in it is bound to follow. The free passage of rain water, the steady circulation of air, always does this. Then comes deeper tillage, but no bringing of clayey subsoil to the surface; we can add to depth of soil without doing that. Then does the surface become so mixed or divided that there is an end of the cracking and deep fissures from drought, always present in crude heavy land. Then, also, may the improved soil be cleaned and ridged high in the autumn without fear of its being shattered and flattened by winter weather. Ploughing, too, may be done soon after heavy rain with all possible advantage. Very different this to the long waiting which is so frequent on unimproved heavy land, because if it is ploughed while saturated by heavy rain it is so apt to dry into hard unworkable clods.

In all tillage there must be a clearly defined plan, a reason for each detail of the work, an end and aim clearly in view. Mere opinion, or any fanciful ideas in connection with it, should be regarded with suspicion. Valuable as deep cultivation undoubtedly is, we never should advise anyone to rush into it at considerable extra expense. No, the matter must be well thought out, the present condition of the soil mastered, its effect upon crops growing in it watched, the possibility, method, and cost of improvement carefully weighed, then to decide if it is worth while. Place the whole thing upon a business footing, throw fancy to the winds, and listen to the dictates of reason and good sense.

It is because we have had so much practice in this important work that we advise deliberation and caution. Several times have we tackled that worse field in a farm which has never been known to yield a full crop, and made it one of the best. Step by step has the work been done. First of all the under drainage and the ditches, then the breaking up, cleaning, and mechanical division, so that it never can settle down again into a cold, wet, inert mass. Then, and not till then, full dressings of manure, it may be after liming, with the sowing of carefully selected

seed, and then success. Subsequently, seasonable tillage and sustained fertility suffice to maintain the high standard which was our aim, and up to which the soil is brought.

WORK ON THE HOME FARM.

As we write the preliminary work of destroying some poor foul pasture in view of obtaining a really useful meadow in place of it has been arrested by wet weather. The condition of this pasture is lamentable, foul with Docks, Thistles, Nettles, Brambles, Broom, Rushes, and Carnation Grass, thin in plant everywhere, we decided that the best way—the only good way, was to pare and burn it, to get rid of foulness in plant growth and insects, then to drain, spread the ashes, plough deeply, give a good dressing of sixty bushels of lime fresh from the kiln per acre, well work it with the cultivator, then to throw it up in ridges early next autumn, and next spring to lay it down to grass again with a crop of Black Tartarian Oats. It could be sown with permanent pasture mixture early this autumn, but we prefer wintering the soil in ridges, and doing our best for the soil before laying it down to pasture again. Had this been done generally, and subsequent cultivation been equally well done, permanent pasture would have been in better condition and more profitable than it is now.

Pasture herbage is abundant, but the growth of it and all other crops has been arrested by the remarkable change to colder weather. This has been especially felt in the dales of Leicestershire and Derbyshire, and stock has suffered somewhat—not from scarcity of food, but from exposure to cold and wet. The warm weather in April and for the first week or two of May, led to the rash shearing of sheep; they must have suffered severely from the change to colder weather. As showing how custom rules we may mention some sheep-washing which we saw being done in very cold weather on May 18th. The folly of this thing was so apparent, because the only reason for pressing on sheep-washing is sultry weather and a consequent risk of attacks from fly.

As we said green food is abundant. Rye is in ear, and must be cut for horses; Tares are being folded, and are a very fine crop; Trifolium is in use, and will soon be done. There is also plenty of Italian Rye Grass, as well as mixed seeds. Rape, Kale, and Cabbage are well up, and the horse hoes are briskly at work among them, there is also much work among root crops.

EFFECTS OF CHEMICAL MANURES.

I FIND great difficulty in procuring muriate of potash when making up your prescription for grass land. Would you kindly say what I can substitute for it (apart from nitrate of potash), as I want to use your prescription of August 3rd, 1893, for orchard trees? My grass, treated with your prescription of January 23rd, 1890, or February 23rd, 1893, is again the best crop in my locality—Chaddesley Corbett. My "practical" neighbours cannot understand it. I tell them to read and profit by the *Journal of Horticulture*.—H. R. W.

[You give your neighbours very good advice. You will probably have no difficulty in obtaining kainit as a substitute for muriate of potash, only you must use one-third more of it, as it is much less rich in potash than the muriate.]

METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude, 111 feet.

DATE.		9 A.M.				IN THE DAY.				Rain.	
1894.	May.	Barometer at 32°, and Sea Level.	Hygrometer.		Direc- tion of Wind.	Temp. of soil at 1 foot.	Shade Tem- perature.		Radiation Temperature		
			Dry.	Wet.			Max.	Min.	In Sun.		On Grass.
		Inchs.	deg.	deg.		deg.	deg.	deg.	deg.	Inchs.	
Sunday ..	20	29.983	46.4	40.8	N.E.	53.3	53.1	38.1	107.4	34.4	—
Monday ..	21	29.952	51.8	44.2	N.E.	51.9	54.3	33.0	104.9	25.2	—
Tuesday ..	22	30.047	50.4	43.0	N.E.	50.7	54.8	34.2	98.8	25.0	0.018
Wednesday ..	23	30.152	47.7	46.2	N.E.	50.1	60.6	41.9	104.3	40.4	0.097
Thursday ..	24	30.300	60.4	52.7	N.E.	50.0	68.7	42.4	114.6	36.1	—
Friday ..	25	30.106	57.8	50.9	N.E.	51.9	70.9	42.3	116.9	38.0	—
Saturday ..	26	29.781	49.6	43.2	N.W.	54.0	56.0	44.6	109.7	39.9	0.262
		30.046	52.0	45.9		51.7	59.8	39.5	108.1	34.1	0.377

REMARKS.

20th.—Overcast day, with occasional spots of rain, and hail at 6 P.M.; bright evening.
21st.—Generally sunny early; overcast day, with occasional sunshine; spots of rain at noon.
22nd.—Bright sunshine till about 11 A.M.; overcast, with frequent spots of rain from noon.
23rd.—Overcast, with drizzle till 9.30 A.M., then continuous rain till 2.30 P.M.; overcast afternoon and fine evening.
24th.—Brilliant sunshine throughout.
25th.—Unbroken sunshine till 3.30 P.M., a little cloud after.
26th.—Windy, with alternate cloud and sunshine, and showers at 0.30 P.M. and 4.30 P.M.; steady rain from 9.30 P.M.
Much colder, but no actual frost except on the grass. Very similar to the (nearly) corresponding week ending May 23rd, 1891; but then the air temperature fell 2.3° lower, while the temperature on grass did not fall so low as in 1894 by 4.2°.—G. J. SYMONS.



RELUCTANTLY do we part with the flowers of spring, yet gladly hail those with which early summer seeks to console us for the loss of the delicate blossoms of the budding season. As we look from the window or walk among the flowers it is felt that the wealth of bloom is well nigh beyond the limits of these notes to describe. Glowing with colour are these masses of golden Alyssum, graceful and beautiful are the flowers of the Saxifrages, some sheets of white blossoms only slightly upraised from the foliage, and others forming plume-like panicles. Dwarf Phloxes, too, have been seeking to give us the highest pleasure with their floral carpets hanging over the stones of the rockeries. Irises, ever delightful to the lover of flowers, are full of beauty; while gorgeous Pæonies, which have proved ineffective to ward off tempests despite their fabled powers, have expanded their great globes of bloom. Still, though these and many others are full of beauty we miss the golden Daffodils, the Trilliums, and the many early flowers which these green leaves beginning to assume a yellow tone tell us have gone from us for this year at least. But it is not my task to sing the requiem of the dead flowers, but to speak of those now in full beauty.

In the borders and at the base of rockwork at the time of writing some of the Squills still shine, and very beautiful do they appear in their varied colours. The Spanish Squill, *S. campanulata*, is very ornamental, and ranges in colour from white to flesh and bright pink, and from porcelain blue to deep blue. Two of the shades of pink I have are very pretty, and are much admired. A fine white variety of *S. patula* has been extremely ornamental planted in a low nook at the foot of a rockery near some plants of *Primula sikkimensis*. The supply of moisture which is so welcome to the *Primula* in summer seems to suit this "Spreading Squill" admirably, and long spikes of handsome flowers are the result. In stray spots, too, some plants of our native Squill, the "Crawtae" of our Scottish lowlands, and the "Bluebell" of the English, grow in considerable variety. These I collected in the neighbourhood, and among them there is found much diversity of shade and size, whites of different kinds and porcelain blues being particularly fine.

Growing in a rather moist place is a neat little plant with pretty, if modest, spikes of creamy flowers. This is *Mitella diphylla*, the Twin-leaved Mitreflower. It is one of the many hardy flowers which have come to us from North America, whence it was introduced more than 160 years ago. It was figured in the "Botanical Register," table 166, and though so long introduced, is not often seen. The flowers, which appear in April, are small, and of a creamy white, but are beautifully fringed. The radical leaves are rather heart-shaped and are on footstalks, while the stalk leaves are smaller and almost sessile. The latter are arranged in pairs opposite each other, whence one would conclude the specific name of *diphylla* was applied to this *Mitella*. It may be increased by division or seeds, and is not difficult to grow, preferring, however, a peaty soil.

The Violas are indispensable flowers, and are generally doing well this season. The *Journal of Horticulture* has, however, among its correspondents others who, like Mr. Wm. Dean, are more competent to speak critically of these useful and beautiful flowers than the writer. One cannot, though, refrain from speaking in

praise of such charming flowers as Duchess of Fife, Snowflake, Countess of Wharnccliffe, and the brilliantly coloured Bullion. A very beautiful Viola, named George Lord, I have lately received, and if one can safely use the expression of any flower taken in hand by the "florist," it is "perfection." Good alike in form, habit, and in the beautiful bright primrose colour of its flowers, which are quite free from rays, this is a flower which will be of great worth in the garden. The miniature Violas, as those of the *Violetta* type are called, are very beautiful, and are quite in place in the best rock gardens as well as in the choicest borders. They are just coming in flower, and some of the newer sorts are evidently acquisitions, although it is difficult to conceive anything prettier in its way than *Violetta*, the first of the section.

Old-fashioned and well known as is *Iberis sempervirens*, the Evergreen Candytuft, it is without doubt of very great value for the garden of hardy flowers. With me it blooms earlier than *I. corneifolia*, and is otherwise so distinct from the latter that both may with advantage be included in almost any collection. I do not feel called upon to discuss their respective merits, for this is a matter in which position must decide which of the two should be grown where there is only room for one. The erect habit of *I. sempervirens* makes it suitable for many places where the procumbent growth of the other would render it objectionable. I have a good bush of *sempervirens* on the top of a rockery, where its white flowers look even whiter and more freely produced than in the borders. It is an old plant introduced from the south of Europe in 1731, and is easily grown from seed or by means of cuttings or division.

It may seem superfluous to write of the Daisies, but I fancy these flowers are not so much cared for as they were at one time. I fear I must plead guilty to a share of any blame which may be attached to the double Daisies being less grown, as eight or nine years ago I had many varieties. These, unfortunately, suffered in the Jubilee year when we had an exceptional drought. I became rather careless of those I had left, and they missed the dividing and replanting so necessary for their well-being. At the time referred to I had some very fine ones raised from seed obtained from a Sussex nursery where a speciality was made of Daisies. I fear the collection in this nursery no longer exists, but it is to be hoped that these old favourites which have adorned gardens for years may not become lost, but that newer sorts will be added. I have been trying to make a collection of Daisies, and I think when it is fairly complete it will form an attractive feature in my garden. I do not intend at present to speak in detail of those I already have, but would only call attention to a charming little pink one named "Dresden China," which I have had for a few years, and is much admired especially by lady visitors to my garden. The flowers are little over half an inch in diameter, and the stems and other parts are in proportion to the size of the bloom.

A very beautiful little Iris is just going out of flower, but it is one which is well worthy of some notice. This is *I. lacustris*, which belongs to the sub-genus *Evansea*, and, according to Mr. Baker's handbook of the genus, is found on the gravelly shores of Lakes Huron and Michigan, both on the United States and Canadian sides. As Mr. Baker says, it is very near *I. cristata*, but is much dwarfer, and of a denser habit of growth. The flowers are smaller also, and deeper in colour, but in one respect at least are inferior to those of *I. cristata*. This is in their being less beautifully fringed or crested. It is, however, a very useful member of that genus which so attracts hardy flower growers. I have a little clump of *I. lacustris* growing in sandy peat on the terrace of a rockery facing west. Here it is quite hardy, and has given me a number of blooms both last year and this. The largest leaf is only 7 inches long, and the flowers are about 3½ inches from the soil. In some gardens, I regret to learn, this charming Iris does not do well. This may be owing to the soil being too heavy, and

the gravelly nature of the earth in its native habitats may be a guide to its requirements in other gardens. The colour of the flowers is described as lilac. This I should qualify by calling it more a lilac-blue, but I am not an adept at colour naming. Another excellent Iris which I received as *I. hungarica* has also been in flower for some time. The proper name of this Iris, I observe from the authority already quoted, is *I. aphylla*. It is somewhat alarming to see the number of synonyms applied to this plant, as it appears to have no fewer than twelve names. It grows to over a foot in height, and has fine dark lilac flowers. It appears to be widely distributed in an uncultivated state, its habitats being given as Eastern Europe, from Hungary and Silesia to the Tyrol. It grows readily in the borders in any ordinary soil.

Some of the Globularias are neat and pleasing little plants for the rock garden or the front row of the border. I grow some three or four species, and among the prettiest of these is *G. trichosantha*, the Hairy-flowered Globularia. It forms a neat plant with shining deep green leaves. The radical ones are spatulate, and those of the stalk lanceolate. The first appearance of the flower heads is rather curious. They resemble round black buttons set in a fringe of leaves; the stem gradually elongates, and the round button becomes a ball of light blue. *G. trichosantha* grows well here on a western exposure, and in a similar position to that in which *I. lacustris* is grown. It may be increased by seed or division.

Poppies are beginning to open, although one of the earliest of the Poppyworts, *Stylophorum diphyllum*, is over before this, and very beautiful are they from the Welsh Poppy (*Meconopsis cambrica*) to *Papaver orientale* in various kinds, and the attractive *P. umbrosum*. Dodecatheons, too, are very effective in half shady nooks, and the same remark applies to a host of other garden gems.—S. ARNOTT, *Dumfries*.

VENTILATING VINERIES.

As each season comes round, some special reminder seems necessary to keep "young hands" from committing the errors which have so frequently been the cause of disfigurement, if not ruin, to many a promising crop of Grapes. It may be that those errors have been perpetrated by thoughtlessness rather than neglect, as it requires a few years of careful training, and perhaps some sharp lessons, to lead many young men to realise the disastrous effects which follow the mismanagement of ventilation. Scorched leaves and warts on leaves, scalded berries, and even rust on berries, may all in turn be caused by ill-regulated ventilation.

Once let them thoroughly understand this, and unremitting attention is invariably secured. This will be absolutely necessary during the next few weeks should the weather prove bright or "catchy," as the dull damp weather recently experienced has not been favourable to the production of either leaves or berries, which will bear bright sunshine without injury. Unless the admission of air is carefully managed, houses having an eastern aspect ought to be looked after sharply in the early morning, and unless the weather is wet or very cold it is a good plan to admit a little air at six o'clock, even though the temperature may not begin to rise for some time after, as it prevents the atmosphere of the house becoming heated much more rapidly than either the leaves or berries, and thus prevents condensation of moisture upon them, which with the rapid evaporation that follows causes scalding and scorching.

Now that danger from night frosts is apparently over, I fancy the practice of leaving a chink of air on vineries throughout the night, provided it can be given on the opposite side from which the wind is blowing, a sudden rise in the temperature is then less likely to take place in early morning. When this does happen the worst possible proceeding is to open the ventilators widely in order to lower the temperature to its normal point, yet this is exactly what many are inclined to do in order that previous neglect may not be detected. The hope is, however, a vain one, as the uncomfortable feeling when entering a house so treated is noticeable to all practical cultivators, and the results of such treatment, which are afterwards apparent, show plainly the course which has been followed, if not the exact time when it occurred. The only safe and rational method of trying to prevent injury, when the temperature has risen rapidly, without ventilation is to give air gradually and at frequent intervals, and to

damp the floors lightly to prevent excessive evaporation from the tender foliage which is unable to endure the strain. In the absence of a corresponding supply of moisture from the roots, a steady and continuous rise in the temperature is then the point to aim at to prevent scald in the berries and scorch in the leaves. A sudden fall in the temperature ought also to be avoided, otherwise the check given will result in washy leaves and rusty berries.

With this object in view, a sharp look out for sunshine and cloud ought to be kept up, and the air reduced when it is seen that the sunshine will shortly be obscured by clouds, or increased when it is apparent that they will quickly pass away. On bright settled days the air should be gradually reduced after midday until it is safe to close with plenty of moisture, so as to conserve sun heat as much as possible. No matter how bright the weather may be, so long as it is continuously bright, mistakes in ventilating are not likely to be made after the few critical hours in the morning are passed, but it frequently happens that dull mornings are succeeded by bright bursts of sunshine during the afternoon. Careful and prompt attention must under such circumstances be given, or much damage will be done. This difficulty is greatly increased when dealing with vineries facing due west, and it is seldom safe to close these as early as others having different aspects. I have seen very severe cases of scald result from venturesome treatment in this respect.

The cardinal points to be observed in the matter may be summed up in a few words—viz., keep a little in advance of bright sunshine or overcast periods in giving or reducing the air, as the case may be; at all times avoid opening widely the ventilators suddenly, and during the prevalence of cold winds open those on the opposite side to that from which the wind comes.—VITIS.

THE NUTRITION OF ROOTS.

THE points raised by Mr. Raillem in his communication of the 17th of May (page 388), are of deep interest to all horticulturists, and to fully understand them involves a knowledge of the physical relations of gases and fluids, the vesicular structure of plants, and the laws which govern the passage of fluids, and the substances and gases held in solution through the cell walls.

The phenomenon of dew depends upon the vapour of water held in suspension by air ascending through the interstices of the soil till it reaches some substance or body which chills it below the point of saturation, when it is deposited in a fluid form. This deposition may take place upon the roots of plants, as in epiphytal Orchids, or upon the particles of the soil chilled either by evaporation or radiation of heat. When soil is in a moist, as distinct from a saturated condition, a thin film of water envelopes the particles, and when nutrition takes place the root hairs are in contact with this film. Water has the power of taking up in solution chemical elements existing in the soil, and also of absorbing the gases which are in contact with the surface, and the extent to which this is carried out depends upon the amount of surface exposed. As all plant structures consist of closed vesicles or cells, matter in a fluid condition can pass into these cells, and it is by means of this fluid only that gaseous and chemical nutrition can take place.

The process of endosmose is always accompanied by the related process of exosmose, by which the waste products of the cell life pass outwards into the soil. This latter being of an acid nature it acts through the root hairs being in close contact with the soil upon the substances found there, and assists the enveloping film of water to dissolve the elements or compounds necessary to plant life. In the case of the spongy tissue of the roots of aerial Orchids, which is to some extent analogous to the open tissues of leaves, there is a film of moisture surrounding and enveloping the outer part of the cell walls exposed to the air. This watery surface has the power of taking up the gases of a nutrient nature present in the air, and these pass into the structure by endosmose, the watery film being renewed by exosmose and by the deposition of water from the supersaturated air.

In the case of manures buried in the soil, certain gases are given off by fermentation and bacterial life. The resulting vapours coming into contact with the watery films in which the root hairs are living, are taken up by the water and passed on with it into the plant tissue. The passage of the fluid into the interior of the cells being by atomic displacement, there are no holes in the living cell wall. The condition of the watery fluid is an important element in supplying manures, and at once suggests the reasons for giving these in a very weakened form.—J. A., *Kew*.

THE correspondents who have kindly written on this question have rather run off the line of rails which led to the answer I wanted to arrive at. If Mr. D. Gilmour (page 424) will read my

letter again, he will see that I never suggested that actual vapour, in the air, could be anything but pure water. What I want to know, is (1), Is it doubted that moisture is always, more or less, rising upwards through the soil? and (2) that such moisture can carry upwards with it, as long as it is in the soil, the soluble elements of manure?—W. R. RAILLEN.



PHAIUS OWENIANUS.

THIS beautiful hybrid was shown by Messrs. F. Sander and Co. at the Exhibition held recently in the Inner Temple Gardens. It is the result of a cross between *P. Oweniae* and *P. Humboldti*, and deserved the first-class certificate awarded. As shown in the engraving (fig. 72), the flowers are medium in size, and are, moreover, unusually well coloured. The sepals and petals have a cream ground tinted reddish brown, while the lip is crimson purple with an orange yellow base.

CATTLEYA WALKERIANA.

As one of the dwarfest of the Cattleyas, this Brazilian species is worthy of being cultivated extensively by lovers of Orchids, not only for the comparatively small space which a number of plants require, but owing to the fact that the flowers are freely produced, and these last some weeks in excellent condition. It is not so well adapted for pot culture, seeming to revel and flower profusely either grown on blocks of wood or in wooden baskets suspended from the roof. Crocks, peat, and sphagnum well mixed forms a suitable compost in which to grow it, a surfacing of clean sphagnum moss completing the operation.

Water cautiously until the plants start into growth, when frequent supplies may be given. If well grown it will invariably bloom in early spring and midsummer. The flowers are often produced in pairs from the young growths, and are from 4 to 5 inches across, the sepals and petals being a beautiful rose, while the lip is a warmer shade slightly stained with yellow.—R. P. R.

PLEUROTHALLIS INFLATA.

THIS species was introduced by Messrs. F. Sander & Co., of St. Albans, with whom it flowered in September, 1891, and subsequently at Glasnevin and elsewhere. According to the "Kew Bulletin," it is most nearly allied to *P. Lindenii*, *Lindl.*, belonging to the section *Macrophyllae racemosae*, but the racemes are apparently always reduced to a single flower. It also bears much resemblance to *P. ruberrima*, *Lindl.*, of the section *Macrophyllae fasciculatae*, though the flowers are not fascicled. The three are quite distinct, if obviously allied, agreeing in the ventricose character of the united lateral sepals, and the peculiar shape of the lip. The new species, strictly speaking, will not go into either group, being neither racemose nor fascicled. It has semi-translucent whitish flowers with some purple spots and streaks on the sepals and petals.

DENDROBIUM SANDERIANUM.

This is a very beautiful species, which evidently belongs to the section *Formosae*, yet it differs from every other in having the base of the mentum inflated into a short sac, something like that of *D. Phalaenopsis*, *Fitzg.*, to which, however, it bears no other resemblance, as described in the "Kew Bulletin." It is most like *D. Dearei*, *Rehb. f.*, though the flowers are larger, the lip far broader, entire, and with a light purple stain instead of pale green at the base, the ovary not triquetrous, and the habit quite different. The stems continue to elongate and to throw out a succession of flowers for a long period, and eventually reach a length of 3 feet or more. The flowers are white, with the exception of a light purple stain at the base of the lip. It was introduced by Messrs. F. Sander and Co., St. Albans, and flowered in their establishment last autumn.

DENDROBIUM GLOMERATUM.

This species belongs to the section *Pedilonum*, and may be placed near *D. cumulatum*, *Lindl.*, from which, however, it differs in having much larger flowers, arranged in a very short congested raceme with large imbricating bracts, and an orange-vermilion lip

without an erect tooth at its base. Thus the habit is nearer that of *D. erythroxanthum*, *Rehb. f.*, a small-flowered Philippine species. The present species, says the "Kew Bulletin," has flowers from $1\frac{1}{4}$ to $1\frac{1}{2}$ inch long, borne several together in loose axillary heads; the sepals and petals bright rose colour, and the lip orange-vermilion. The lip is infolded at the apex, and the margin erose-denticulate. It was imported by Messrs. James Veitch and Sons, of Chelsea, and flowered in their establishment last December.

ORNITHIDIUM FRAGRANS.

This species of *Ornithidium* flowered with Mr. F. W. Moore, A.L.S., at Glasnevin, in March, 1893, and in the collection of Sir Trevor Lawrence, Bart., Burford, Dorking, in January of the present year. From the latter we learn that it was imported by Messrs. F. Sander & Co., of St. Albans. It is allied to the Mexican *Ornithidium densum*, *Rehb. f.*, which has far more numerous flowers, of about a third the size, much more compressed pseudo-bulbs, and longer leaves. The flowers are whitish, faintly suffused with mauve-purple, and the front lobe of the lip dull mauve-purple. The flowers are fragrant, something like heliotrope.—("Kew Bulletin.")

CULTURAL NOTES ON ORCHIDS.

THE temperature in the warm houses will now need to be slightly increased. The plants are growing freely and must not be checked



FIG. 72.—PHAIUS OWENIANUS.

in any way. Increased supplies of moisture at the root and in the atmosphere are also necessary. When root and top growth are both active too much can hardly be given to healthy Orchids if properly potted. Sharp applications of fire heat are needed during spells of cold wet weather like that lately experienced, and dampings in the evening are necessary to prevent a dry atmosphere. Carefully avoid the hot pipes in damping, as the scalding steamy vapour which arises from these, when wetted, is not conducive to a solid growth.

Change the air in all the houses daily by ventilating as early as possible, but avoid all chilling draughts. When there are ventilators opposite to or below the hot water pipes, these should now be left partly open night and day. This will prevent the stuffiness often felt on entering a house in the morning that has been closed all night, and is very beneficial to the plants. A suitable temperature for East Indian Orchids will now be 60° to 65° , while for Cattleyas from 5° to 10° lower will suffice.

Light syringings at closing time on hot days may now be given with safety to *Aërides*, *Vandas*, and other Orchids of a like habit, also to many of the pseudo-bulbous kinds, but care and judgment must be exercised in the operation. Cattleyas and *Laelias* may easily be damaged in this way in the earlier stages of growth, as the outer sheath of the young bulb forms a cup which would hold the water and cause decay. When the bulb has advanced another stage, and the top can be seen above the sheath, syringing is advantageous, but not before. If water is seen lodged in the young growths, the plants should be lifted and turned upside down to allow it to escape. The Cattleya grub sometimes makes its unwelcome presence known by malformed growths. By an accustomed eye these are easily detected when very young by the abnormal swelling at the base, and the pointed appearance of the growth. I know of no cure for these grubs, a partial remedy being to break out the growth and destroy it, but the earlier this is done the better.

Among the *Dendrobiums* now flowering is *D. dixanthum*, a kind not often met with, though by no means a new plant. The

flowers are two pleasing shades of yellow, the lips darker than the sepals and petals. It is very free flowering, and should be treated the same as other deciduous species. Phalanopses must be taken in hand as soon as the flowers are past. All decaying substances about them should be removed, and a little fresh moss given where necessary. The flower spikes need not be cut off if these are fresh, as some species produce young plants from those which are usually left on the parent plants for the first year. If roots are seen to be forming they can easily be brought to the surface of the pot or basket, and there fixed, to be separately potted the next spring, or they may be, if convenient, pegged to small pots containing crocks and a little moss, and cut off when rooting freely

Strong healthy plants of *Zygopetalum Mackayi*, and *Cymbidium Lowianum* will be benefited by a light top-dressing of dried cow manure applied now, or the same assistance may be given in occasional doses of weak liquid manure. *Thunias* that are coming into flower, and have the pots full of roots, may also have a little manure water. These now need a light sunny position to ripen the stems and foliage. When this begins to fall less water will be needed, but nothing approaching a dry soil is advisable until all the leaves are off. Keep the sphagnum growing freely about *Odontoglossums*; this keeps the base of the bulbs cool, and assists the roots materially. *Oncidiums macranthum* and *undulatum* frequently push young roots above the surface of the compost. Cover these with a little moss to prevent slugs and other insects eating the fresh green points. See that all advancing growths have room to swell. The occasional removal of a spent pseudo-bulb, or tying back a sound one, will prevent crowded and misshapen pseudo-bulbs in large masses of *Odontoglossums* and other Orchids. Nothing in the way of litter of any kind must be allowed to remain in the houses; empty pots, crocks, and other things all form harbour for slugs and woodlice, besides having an unsightly and slovenly appearance. Keep cool Orchids in houses or frames as near 60° as possible by day, at night 50° to 55°.—H. R. R.

STORING APPLES.

THE storing of Apples provides a lesson many may learn and benefit by. What is our system of doing so at the present time? A very poor one indeed; as generally our "storing" consists of putting the small pittance we obtain from the dealer at the time of gathering in our pockets, then grumble and say fruit hardly pays for growing. Rightly so under the circumstances, for not only do our pockets suffer, but the trees as well, as very often fruit buds leave the trees with the fruit.

Let us now see what might be done if we study the little word "store." What an alteration we could make if we like in the state of affairs! When the majority of our home-grown Apples are put in the market, one, two, and perhaps three shillings per bushel may be obtained for them; in December, January, and until Apples come again prices go up to eight, ten, and twelve shillings a bushel. Who realises these prices? It is our friends abroad who reap the golden harvest that any man could do if he has a good keeping variety in his garden, after studying the word "store." I think there will be several persons ready with the excuse, "I have no storeroom." This I contradict, as anyone who has a good Apple tree has an excellent storeroom too which Nature has provided for him, and one also that will answer his purpose far better than the so-called fruit room.

I strongly advise all who have good keeping Apples to give the following method a trial during the forthcoming autumn. A few days before commencing to gather the late varieties fork up a well drained plot of ground so as to allow the air to penetrate, sweeten, and dry the soil. When selecting samples choose good sound fair-sized Apples, and only those that will keep sound in ordinary stores until Christmas or later. Place a layer of clean sweet straw 6 inches or more in thickness on the soil that has been previously loosened, and in circumference according to the number of Apples to be stored; then place the fruit carefully in a round heap, with a sharp slope, and protect them from the rain for about a fortnight. Give all the air possible so as to allow them to perspire a little, then cover with more straw about 9 inches in thickness. Hay should never be used with Apples in a pit, as it goes musty. Round the bottom of the heap cut down with the spade 6 inches from the straw, so as to form a circle, and dig a trench outside the mark to cover the straw to the depth of 6 or 9 inches, beating firmly to let off rain. The storeroom is then complete. When taking the fruit away from the pit, wipe the mould off with a cloth, and the result will be Apples far superior to any imported varieties.

This is a method that all may adopt, as the only item of

expense is the straw, and it is no fancy but practical advice as the following will show. In November, 1892, I brought a bushel of different samples of Apples from Botley to give the method a trial. They were pitted as above mentioned, and taken from the pit the first week in March. The varieties tried were Wellington, Hambledon Deux Ans, Autumn Pearmain, and Winter Pearmain. The samples of Autumn Pearmain were a little specked with decay, but the other three were as sound as when pitted, and admired by all who saw them. I had two samples of Wellington in my pocket the first week in June.

Sir Henry Jenkyns' gardener at Botley has carried out another trial, mostly with old varieties, including Hambledon Deux Ans, Sturmer Pippin, Norfolk Beefing, French Crab, and Wellington. How is it that the latter named variety was not included in the list of varieties given in the pamphlet, "Fruits for Cottagers," and sent out by the Royal Horticultural Society? I consider it one of the best and most profitable varieties in cultivation. I enclose samples, which have been forwarded to me from this trial, not selected for the purpose, but merely to show me that the trial has been a great success from every point of view. All the varieties named kept sound with the exception of Wellington, which unfortunately was in contact with a bad keeping variety, and these were slightly damaged. This proves that only good keeping varieties should be used for this purpose. The result of this will be, I hope, a still larger trial next year.

If the readers of the *Journal of Horticulture* will only adopt this method, and give it a fair trial, I have not the least doubt these few lines will prove of great assistance to the neglected Apple industry of Great Britain, and my efforts will not have been in vain.—W. PALMER, F.R.H.S.

[The samples sent were in excellent condition, especially Sturmer Pippin, Norfolk Beefing, French Crab, and Hambledon Deux Ans. A fruit of the first-named variety was cut, and the flavour was found to be scarcely affected, but an unnamed Apple (Wyken Pippin) tasted decidedly "earthy." Samples of Wellington that had been stored as recommended by our correspondent were quite sound, while a fruit of the same variety kept in an ordinary sitting-room was much withered.]

DECORATIVE BRITISH FERNS.

THE SPLEENWORTS.

(Continued from page 318.)

UNDOUBTEDLY the most popular Spleenwort or *Asplenium* is an exotic one—*A. bulbiferum*, a favourite with the trade, because it practically propagates itself, the fronds bearing little plants all over them. So prolific indeed is it that these little ones very often may be found to bear a second generation while still depending upon the parent frond for support. Taken off and pricked into the soil they at once go ahead, and speedily form saleable plants. Now it is a most curious fact in connection with our theme of varietal Ferns that though this Fern, as a market one, must have been raised literally by millions, not a single sub-variety has ever made its appearance, due, as I imagine, to its being always raised as described instead of from the spores, which it nevertheless freely produces. Since, however, the powers of reproduction, if abnormally fertile in one way, are apt to make up for it in another, the spores of this may not easily germinate—at any rate, we are not aware that it figures in any way as a "stray," as do some of the *Gymnogrammas* and *Adiantums*, which often form the weeds of the fernery.

Another strange fact is that though the whole genus of *Asplenium*—a very large one—is peculiarly constant and free from variation as regards the exotics, most of our British species have sported into very distinct forms in a wild state, and it is precisely this general constancy which to my mind is a chief argument against the classification of the Lady Fern, one of the most variable of all species, as an *Asplenium*, as is done by our chief botanists on account of a slight resemblance in the fructification.

No genus possibly ranges through so wide a series of form and size as this. In the one direction we have magnificent specimens of the Bird's-nest Fern (*Asplenium nidus avis*), with broad simple fronds 5 feet high and a foot across, ranged shuttlecock fashion round a central crown, and at the opposite extreme figures our diminutive native *Asplenium septentrionale*, which strongly resembles a small tuft of grass. All our native species, however, are of comparatively small size, ranging from the one just cited to fine specimens of the Black Maidenhair Spleenwort (*Asplenium adiantum nigrum*), with fronds over a foot in length.

Our British *Asplenias* are no less than nine in number, constituting a very fair quota of some forty-four native species all told. These are—1, the Green Spleenwort (*A. viride*); 2, the Maidenhair Spleenwort (*A. trichomanes*); 3, the Forked Spleenwort (*A. septentrionale*); 4, the Sea Spleenwort (*A. marimum*); 5, the Alternate-leaved Spleenwort (*A. germanicum*); 6, the Wall Rue (*A. ruta muraria*); 7, the Black Maidenhair Spleenwort (*A. adiantum nigrum*); 8, the Smooth Rock

Spleenwort (*A. fontanum*); and 9, the Lanceolate Spleenwort (*A. lanceolatum*). The Lady Fern I resolutely decline to deal with under this heading. Now among these Nos. 3, 5, 6, and 7, though very pretty in their way when nestling at home in their native rocks (and, barring No. 6, great catches when found, as they are exceedingly rare), not only possess little decorative value in themselves, but have yielded no distinct varieties, and are of very difficult culture. I will, therefore, dismiss them, merely remarking that as thorough rock Ferns they must be treated accordingly in a well drained mixture of pieces of porous stone forming chinks filled with leaf mould, into which chinks they are installed, imitating Nature as far as possible, and giving them abundant light and air. It is, indeed, the difficulty of supplying enough of this last without giving too much to their frailer companions which leads to their failure, as a rule, in otherwise successful ferneries. I will refer to the other species in their order.

THE GREEN SPLEENWORT (*A. VIRIDE*).

This resembles very strongly the Maidenhair Spleenwort described hereafter, but has a green stalk instead of a black one, and somewhat stouter fronds. The pinnæ, too, are firmly attached to the midrib without the joints at which they are shed in the other species. It is a tenant of deep chinks in the limestone at low levels, but high up in the clouds among the loftier hills it is found in profusion amid the rocky débris, and even in the short adjoining grass. Some dozen varieties are recorded, of which multifidum is reported as not uncommon. This has the apex irregularly crested. Bipinnatum and incisum are the two handsomest. As it requires a constantly moist atmosphere I grow the species in a close frame in Essex, but Mr. Lowe in his damper climate near Chepstow only protects them in a greenhouse in winter and hangs them up on a north wall during the summer, only watering in very dry weather.

THE MAIDENHAIR SPLEENWORT (*A. TRICHOMANES*).

This species is one of the commonest of the genus, and is found as a wall and hedge Fern in most of the counties of Britain. It has long slender fronds formed of a black midrib bearing oval or roundish subdivisions, which in the second year fall off at a joint, leaving the midrib persistent. It is not nearly so dainty in its requirements as *A. viride*, and in my fernery has spontaneously filled many a chink in the rock-work with its bright green graceful radiating tufts, while in a wild state I have seen old walls literally swarming with plants growing in absolute mortar. This species is probably the most sportive of the genus, no less than twenty-seven distinct forms figuring in the latest lists. *A. t. cristatum*, with finely tasselled frond tips, has been repeatedly found, and I have one frond in my collection, grown by myself, in which the broad spreading tassel is over 2 inches wide.

Many years ago, whilst visiting Edinburgh, I dropped in at a nursery where there were a few British varieties; one was a small plant, apparently dead, of *A. t. cristatum*. Fancying I saw a spark of life, "bang went saxpence," and the Fern was mine. The spark, however, proved an illusion, the plant was dead. The following spring I was in the act of throwing it away when it occurred to me to use my lens and seek for spores among the débris. Spore cases I saw, and sowed the "débris." The result was a mass of fungoid growth. Once again I was approaching the rubbish heap, but this time detected some prothalli on the inside of the pot rim. I pricked these off on to clean soil, and raised no less than thirty-six splendid plants, all crested beautifully, as my final reward. I give this experience at length, as it conveys a good lesson.

The variety incisum is the plumose barren form of the species, and has been found in several distinct localities. Clapham's is the best, and in this the oval pinnæ are transformed into deeply cut triangular ones—almost, indeed, divided again. *A. t. conflens* (*Stables*) is a curiosity, and a supposed hybrid between *A. trichomanes* and *A. marinum*. It has fronds nearly a foot long and an inch wide, the pinnæ running together at the tip. It is very rare, as though apparent spores are produced profusely, they are imperfect, and yield nothing. *A. t. Harovi* and *Moulei* have much smaller lobes or pinnæ than the species, and these are crenate or wavy. I have twice found kindred forms, once at Holne, S. Devon, and more recently at Killarney. *A. t. ramo-cristatum*, *polydactylum*, *ramosum*, and *corymbiferum* are all highly developed forms of *A. t. cristatum*.

If planted in pots *A. trichomanes* should be placed next the edge. It prefers a chink on a slope, where the drainage is perfect; it is out of its element on the flat.

THE SEA SPLEENWORT (*A. MARINUM*).

This Fern is well named, as its habitat is always close to the sea, in chinks in the cliffs or walls well within the immediate influence of brine-laden breezes. I have found watering it with brackish water beneficial. It is very distinct from its brethren, having bright green stout fronds, once divided, the lobes or pinnæ being oblong, with bluntish tips and slightly crenate edges. It is, like all the family, perfectly evergreen, but is not constituted to stand frosts, and perishes in winter unless protected in a warmed house. It only frequents the warmest coasts, and doubtless the salt breezes prevent the little frosts there prevalent being fatal to it.

Treated as a warm greenhouse Fern, or even as a tropical one, it thrives apace, being quite an exception in this regard to our British species, which, as a rule, resent coddling. It has produced some twenty-eight varieties, the best of which by far is *A. m. plumosum*—a fine robust twice-divided barren form, attaining 2 feet in length of frond;

A. m. imbricatum, in which the pinnæ are well overlapped, is a good form; and so in another direction is *A. m. capitatum*, bearing a large crest. Most of the others can only be classed as sub-varieties, and I therefore pass them by.

THE BLACK MAIDENHAIR SPLEENWORT (*A. ADIANTUM NIGRUM*).

This is very common as a wall and hedgebank Fern in many parts. It has its fronds twice or even thrice divided, and of a shining dark green with purplish black stalks. It varies a good deal in the bluntness or sharpness of its parts, the handsomest forms belonging to the sharp or "acutum" section. The common market Spleenwort fronds so much used for bouquets, and called the French Fern, are from a continental form of this species. The most distinct variety is *A. adiantum n. grandiceps*, in which the fronds are nearly all crests. This form has been found twice—once in Ireland and once in England, and comes perfectly true from spores. *A. ad. n. microdon* has very large almost simple pinnæ, and is supposed to be a cross between this species and *A. marinum*. A curious but hardly beautiful form was found by myself on Dartmoor in abundance, *A. ad. n. caudatum*, in which all terminals are extended, forming long tails, while on each frond numerous lobes are reduced and yellowish in tint. This species grows best in fine sandy leaf mould.

THE LANCEOLATE SPLEENWORT (*A. LANCEOLATUM*).

This is another seaside member of the family, but not quite so fond of the brine. It bears a strong resemblance to the last-described species, but has greener stalks and a more spear-shaped frond. *A. l. microdon* is identical in form with the variety of same name of *A. adiantum nigrum*, and, like that form, is a presumed hybrid. *A. l. cristatum*, found in the Azores, is the most evenly crested form possibly of the whole genus.

The secret of successful Asplenium culture is mainly good drainage and a loose rocky compost. All are wall or hedgebank Ferns, and are never found in level soil. The rockery, in short, is their home, and in it they will best take care of themselves. All are evergreen.—CHAS. T. DRUERY, F.L.S., F.R.H.S.

(To be continued.)

DAMAGE TO ORCHARDS.

THE very severe and serious damage by caterpillars to the fruit trees in many districts ought to cause fruit tree planters to abandon the system of cropping land with what is called top fruit over bush fruit. It is impossible to entirely destroy the pest on standard trees unless the land is clear under them, which would allow burning or liming the soil. If a plantation of dwarf standards is made it is possible to dust the trees with lime with comparative ease. If the orchards are planted with trees 12 by 12 feet the land can be for a great part cleaned between the rows with a horse hoe and dressed freely with lime in the spring and autumn at the appearance of the caterpillar in the spring and of the moth in the autumn.

If the soil is partly prepared in the spring for autumn planting a liberal allowance of gas lime turned in by the plough will be of great benefit; lime is a supreme destroyer. The land being kept clean between the rows, there seems no reason why the pest should not be entirely eradicated; but there must be no old grass orchards near. Gooseberry and Currant orchards should be separate. Orchards of Apples on the Paradise stock may be planted 9 feet apart. As they come into bearing in three to four years' time they are quickly profitable, and from the dwarfier growth, the trees can be cleaned with great facility with either Paris green, if this is really destructive, or with lime. Planting for posterity ought to be given up; young orchards are infinitely to be preferred.—T. FRANCIS RIVERS.

THE GOOSEBERRY CATERPILLAR.

WHEN the fruit had just set on my Gooseberry bushes I noticed that a few of them were infested with caterpillars, and being very busy at the time, nothing was done to destroy them. When the fruit was nearly large enough for gathering they had increased to such an extent that the whole of the crop would soon have been spoilt, as well as the bushes being seriously injured by loss of foliage, so that I was obliged by some means to destroy the enemy. Not liking to use any insecticide that would discolour or injure the fruit, the following remedy was tried, which proved effectual, and perhaps may be useful to others. The bushes were sprayed with hot water at a temperature of 120°, and then given a sharp shake, this dislodging most of the caterpillars the hot water had failed to reach. After this treatment most of them were on the ground, when a thick coating of soot spread over them prevented further damage. The next morning all the bushes were looked over, and any caterpillars that had escaped were picked off and burnt. By following up the hand-picking a few times I hope to be entirely free from them. When the caterpillars are full grown they take much killing, and it is very necessary to give a thick coating of soot or they will crawl through it and soon be up the bushes again feeding. Though the soot does not kill them at once, they being wet, it sticks to them, and prevents their getting to the stems again, and they die in a day or two. The soot must be applied immediately the washing is done.

Freshly slaked lime was also tried, and though so hot that a trowel had to be used to apply it, the caterpillars seemed none the worse; they soon crawled through it, and found their feeding ground again, and a

second washing had to be given and soot used. The hot water was applied to the bushes by means of the "Eclair knapsack spraying pump." This is a very useful machine for spraying fruit trees, Roses, or anything that may require it, being a great economiser of insecticides and much better than syringing. For those readers who may not be familiar with the machine, perhaps a description may be useful. It is made of copper, and holds a little over three gallons; it is carried upon the back of the operator, being secured by means of straps round the shoulders. On the left hand side is an iron handle for working the pump, on the right hand side an indiarubber tube 3 or 4 feet long is screwed in, the end of this tube a brass pipe is fixed; this has a tap at the lower end to turn on the pressure, the sprayer being screwed on the other; this latter is fitted with a universal joint, so that the spray may be delivered in any direction. There are three or four different nozzles to fit on the sprayer. Under the lid is a strainer, which prevents any rubbish getting into the machine while being filled. In using the machine the operator works the pump with his left hand, and with his right hand directs the spray, which is delivered almost as fine as dew.—J. S. UPEX.

INSECTICIDES AS APPLIED TO FRUIT TREES.

I THINK that this is a season in which, if the fruit crop is to be saved from insect pests, a quantity of insecticides must be used, and I hope some of your able correspondents will give their experience with the wash they use. I am still using quassia, softsoap, and petroleum, and will send you the result in due time. I do not like arsenical compounds, and I shall not use them unless compelled to do so. Our gardens and orchards are not American prairie orchards. There is generally an undergrowth of soft fruits or vegetables in most English gardens and orchards, and arsenic is a far-reaching substance.—R. M., *Newbury*.

SYRINGING "MALMAISON" AND OTHER CARNATIONS.

I HAVE been much interested in this discussion as far as it has gone, but I hoped further information would have been forthcoming from some of your correspondents. There are two forms of disease which attack Carnations, but I failed to discover which of the two those who contributed articles on this subject really alluded to. The one attacks the leaves in round blotches, and finally produces a number of red or brown spores on the surface. I have not been troubled very much from this form. Some years ago several plants of "Malmaisons" were attacked by it that were growing on the side stage of a greenhouse on a bed of ashes. The general treatment of the house was to suit Azaleas, Epacrises, and other Heaths. The blotches of the disease were scraped out with a knife and the places filled with flowers of sulphur, and the disease disappeared as mysteriously as it had made its appearance. This form of disease I have not seen since.

The other disease may perhaps more correctly be called a spot, but it works sad havoc on "Malmaisons" and other Carnations. While at Norris Green some years ago the old crimson Clove was the favourite, and thousands of plants practically succumbed to this disease. Here we are troubled with the same form. Last autumn some 2000 plants of Mrs. Reynolds Hole were layered and potted, and about 600 of a dark crimson Carnation, Marquis of Lorne. The two had exactly the same treatment, that is, left outside until they were rooting freely, then stood on ashes in a lengthy cold frame. The result was that the former remained perfectly clean, while fully 400 of the latter were totally destroyed by the disease, and the remainder reduced to a wretched condition. Why does the one suffer and not the other, both being strong growers? In another frame were various kinds, and along with them Queen of the Bedders which escaped, while others were seriously attacked. The treatment was cool, airy, full ventilation whenever favourable, watered carefully, giving them sufficient only to prevent suffering. Some plants left outside were also badly attacked, as were Pinks in variety. These Pinks which came out of Lancashire have grown luxuriantly, and no disease was noticed upon them until this spring. Other diseased plants planted out appear to be growing out of it.

What I want to find out is, when the plants are attacked how are we to arrest the progress of the disease whether on "Malmaisons" or other Carnations? I have growing side by side "Malmaisons" and Miss Jolliffe, the latter perfectly clean while the former are badly spotted. I must admit this, I observed the plants of the former were diseased slightly when I started with them. For a time they seemed to be growing out of it, but during the late dull and cold weather it has broken out on the plants as bad as ever. These particular plants are plunged in ashes in a span-roofed frame, have been given abundance of air and grown perfectly cool. During those few warm, bright days that we had some weeks since slight shade was given. The plants have not been syringed.

I carefully noted Mr. J. Hamilton's note (page 367), and can bear testimony to the clean healthy Rangemore plants. Lady Burton sent a dozen of a certain kind to Sir Peter Walker, and I never saw healthier or more robust plants. Whatever may be the treatment at Rangemore and Byrkley no one could desire better examples; in fact, I am not certain whether they could be found. The exact treatment that these plants receive would, I am certain, prove invaluable to many readers of the *Journal of Horticulture* besides myself, who is always open to improved methods of culture whether for Carnations or other plants.—WM. BARDNEY, *Osmaston Manor Gardens*.



EVENTS OF THE WEEK.—Horticulturists will be busy during the ensuing week. In addition to the usual fortnightly meeting of the Royal Horticultural Society at the Drill Hall, James Street, Westminster, on Tuesday, the 12th inst., the London Pansy Society and the Southern Pink Society will hold their respective exhibitions at the same time and place. The great York Gala opens on the 13th, to be continued the two following days. Colchester Rose Show also takes place on the 13th inst.

— THE WEATHER IN LONDON.—Much rain has fallen in the metropolis since publishing our last issue, the heavy showers being alternated with sunshine. Sunday was fine and warm, whilst early on Monday morning a thunderstorm was experienced, this being accompanied by a downpour of rain for several hours, a bright afternoon following. Tuesday was dull, and rain threatened, a little, however, only falling at night. Wednesday opened cloudy but fine, though at the time of going to press the weather does not appear to be very settled.

— ROYAL HORTICULTURAL SOCIETY.—The next meeting of the Royal Horticultural Society will be held in the Drill Hall, James Street, Victoria Street, Westminster, on Tuesday, June 12th, when special prizes are offered for the best new seedling Orchid and for single and double Pyrethrums. In connection with the Society's meeting the London Pansy Society and the revived Pink Society will both hold exhibitions of their respective specialities. At 3 P.M. Mr. Geo. Nicholson, Curator of the Royal Gardens, Kew, will deliver a lecture on "Flowering Trees and Shrubs," exhibits of which will be welcome. After the lecture the President of the Society will, on behalf of the Veitch Memorial Trustees, present a Veitch Memorial medal to the lecturer, and also to Col. R. Trevor Clarke, Messrs. T. Francis Rivers, A. H. Kent, James Martin, and Charles Moore.

— A FINE BOUGAINVILLEA GLABRA.—At the exhibition of the Royal Botanic Society last week, a fine specimen Bougainvillea was shown by Mr. Kidley, gardener to W. E. Hall, Esq., Coker Court, Yeovil, Somerset. The plant was well grown, being nearly 5 feet high and 7 feet in diameter. It is said that this plant was raised from seed which came from Africa, and Mr. Kidley has grown it for the past nine years. The bracts are much darker in colour than that of the type, and are freely produced.

— GRAPE GROS MAROC.—After reading the interesting remarks of Mr. W. Iggulden (page 373) and those of Mr. S. Castle (page 413), I have to say that my experience with the above Grape is entirely in accord with that of Mr. Iggulden. I planted a strong pot Vine, and gave it what I considered good treatment, but it refused to grow satisfactorily. I then took a bud from it and inserted on a Muscat of Alexandria, which grew vigorously and produced some good Grapes with round black berries, after the manner of Cooper's Black, as shown for several years at Reading Show by Mr. Wells of St. Leonard's Hill, Windsor. I have another Vine inarched on a Black Hamburgh, which does not colour so well, and the berries are oval instead of round. I find them much the best on a young rod.—R. MAHER, *Yattendon Court, Newbury*.

— WAKEFIELD PAXTON SOCIETY.—A very interesting paper was read at the last weekly meeting of this Society by Mr. J. Clark, M.A., Ph.D., Yorkshire College. Subject: "How Our Wild Flowers Came to England." Other papers to be read during the month are the "Summer Treatment of Fruit Trees," by Mr. T. Pitts; "Table Plants," by Mr. H. Tranter, Sheffield; "Seeds and Seed-sowing," by Mr. T. Gartery, Rotherham; and the "Cultivation of the Strawberry," by Mr. W. H. Vere.

— PINK SHOWS.—We have received the schedule of prizes of the Midland section of the National Pink Society's Show, which is to be held in connection with the Wolverhampton Floral Fête on July 10th, 11th, and 12th. Excellent prizes are offered for blooms for the florists' laced varieties, and also for border varieties shown as bunches and bouquets. Mr. C. F. Thurston, Penn Fields, Wolverhampton, is the Honorary Secretary. The Exhibition of the Southern Pink Society will be held in conjunction with the meeting of the Royal Horticultural Society at the Drill Hall on the 12th inst.

— THE LINNEAN SOCIETY.—We understand that the gold medal of the Linnean Society has this year been awarded to Prof. Haeckel, of Jena, for his important contributions to zoological science.

— MESSRS. W. & G. DROVER, Fareham, have received a letter from H.R.H. Prince Henry of Battenberg allowing the firm to name a new *Cattleya Mossiæ* Princess Beatrice which Her Royal Highness greatly admired in the bouquet presented to her at the Fancy Bazaar, Portsmouth.

— INSECT PESTS.—The hot summer of last year, so favourable to all insect life, has left us progeny enough in that line to last us for generations. Green fly are very plentiful on Roses, Gooseberries, Red, and even Black Currants and Plums. Caterpillars very bad on Apples, and black fly on Cherries. Many of the Oaks in the woods are nearly stripped of their foliage. We have cleaned our Roses with a strong solution of Sunlight soap, applied as hot as can be used comfortably.—R. I.

— DEATH OF MR. M. HANAGAN.—It is with profound sorrow that I ask you to announce to the readers of the *Journal of Horticulture* the death of Mr. M. Hanagan of Hooton Hall Gardens, Cheshire, on 1st inst., in his forty-eighth year, after a long and painful illness extending over some seven or eight years. The deceased, who had charge of the above gardens upwards of twenty years, was a well known fruit grower and a successful exhibitor. He leaves a widow and family and a large circle of friends to mourn his loss.—E. B. H.

— THUJA LOBBI AUREA.—I have forwarded three plants of *Thuja Lobbi aurea*. It is one of the hardiest Conifers with me, and ought to be more extensively grown. It has a better habit than the type: I have the impression that it is not generally known, as I rarely see it even in nurseries. I have never seen such devastation caused by a frost as that on Sunday, the 20th ult., after more than sixty years' experience.—C., *West Yorkshire*. [The young shrubs, 18 inches high, are bright, hardy-looking, and attractive, but the habit appears more rigid than the typical *Thuja gigantea*, popularly known as *T. Lobbi*.]

— TRADE AND WEATHER IN AMERICA.—Many years ago the Farnham Castle collection of Orchids had a celebrity, and for seventeen years or more was under the charge of Mr. J. W. Laurence. On the death of Bishop Sumner, and after the sale of the Orchids, Mr. Laurence and his family emigrated to the United States, and commenced business as a florist near to Harrisburg. Ever since he left England a correspondence at intervals takes place betwixt him and myself, and in his last letter, of April 16th, he writes:—"The money panic has been a long tight squeeze, and we have been in the pinch—no work going on, and no one had any money to spend; but things are beginning to look up a little, and we hope to see good times again before long. We have not had a very hard winter, but had a very early break up. March was the warmest on record, and buds were swelling fast; but last week we had 2 feet of snow, breaking down branches and doing other mischief. To-day it has nearly disappeared, and is almost 70° in the shade."—W. D.

— PEACH AND NECTARINE VIOLET HATIVE.—I noticed recently at Maiden Erleigh that Mr. Turton had worked Nectarine Violet Hative on to the Peach of that name with much success. Not many Nectarines are required, as the Peach is the favourite fruit, and therefore a few lower branches sufficed. Still it was interesting to note that the Nectarine was putting on colour, whilst the Peach was a long way from being ready, would indeed want another six weeks. In the same house a large tree of Royal Ascot was carrying a grand crop, probably some forty dozens, the fruit swelling and colouring fast. The variety is one that has points on the fruit very markedly. Mr. Turton speaks highly of Royal Ascot as an early variety. It is of fine quality, always crops heavily, and never suffers from bud-dropping when forced.

— ASPARAGUS.—I have seen no better Asparagus in any garden than is at Maiden Erleigh. The rule there is to sow in the drills where the plants are to remain, and then thin the seedlings. The rows are some 30 inches asunder, and the plants 18 to 20 inches apart in the rows. A breadth is sown every year, and the old roots are lifted for forcing at the fourth year. Thus a fine stock of plants is well maintained. I was specially struck with the strength of the two-year-old growths, bidding fair to make wonderful stems during the summer. It was easy to see that with such growth there would next year be fine stems to cut, and those now thrusting up from the third year's sowing showed as fine English-raised as I have ever seen. Of course the ground is well prepared by deep trenching and manuring. The system compares remarkably with the old plan of beds standing for many years.—D.

— AGAVE AMERICANA.—At a recent meeting of the Royal Botanic Society the Secretary stated that two plants of this *Agave* were showing their flower buds in the conservatory. The last time one flowered at Regent's Park was in 1859, and the plant was said to be over eighty years old. It produced a flower spike 30 feet high.

— RUBUS NUTKANUS.—Mr. W. H. Divers, Belvoir Castle Gardens, Grantham, writes:—"This plant, now in bloom here, is worthy of notice on account of its large white flowers, which measure 2½ inches across. Like others of this family the flowers are short-lived; but they open in succession for a considerable time, and no one who has once seen it will question its beauty. It is growing in a sheltered position."

— ASTER ALPINUS.—This is the first of the Michaelmas Daisies to open its flowers. This year many of them were expanded during the month of May, which is unusually early, July being the month of its flowering. The bright purple flowers are very showy, produced as they are on stout erect stalks but a few inches high. As a rockery plant this Starwort is especially valuable. By dividing the roots a stock of plants is quickly and easily obtained.—S.

— THE ONION MAGGOT.—Apropos of the recent controversy in the *Journal of Horticulture* the following extract from an American paper may interest your readers. "We fought a losing battle with this enemy for several seasons until kerosene was tried, and we have had good crops ever since. Half a pint of kerosene is well mixed with a pailful of some dry material, preferably wood ashes, but sand, sawdust, or even dry soil will do fairly well, and after the plants are well up and the trouble is at hand a sprinkling of this mixture along the rows about twice a week during the time the fly does its work will be found a sure preventive of the trouble. With us this is from the beginning of April to the end of May; after this there is little danger, as the Onions are of a good size and not so liable to injury."—C.

— CABBAGES.—"A. D.," at page 429, calls attention to Cabbages, that it would be better if fewer varieties were in cultivation. I am afraid that the weeding out of inferior sorts must begin with seedsmen, for so long as names are catalogued someone will buy them. More than one grower has been deceived this spring, for what was thought a good stock of Ellam's turned out to be a counterpart of that described by your correspondent. I bought seed in the summer of 1892 and 1893 from a firm of high standing. When talking to them of the inferior strain from the 1893 seed beside the fine stock from the seed of the 1892, they turned to their books to see where the seed was obtained, and both samples were supplied by the same wholesale house in London. Until wholesale houses pay strict attention to rigid selection and isolation of all stocks for producing seed, I very much doubt but we will have at times to put up with being "shamefully deceived."—G. M.

— PLANT AND FLOWER MARKETS.—Whilst London has its huge Covent Garden covered market for plants and flowers, it is still doubtful whether horticulture, as found in this section of it, benefits so much as would be the case were there many glass-roofed plant markets about the metropolis. But it seems to be peculiarly in provincial towns where such markets are needed. Here in Kingston plants and flowers constitute a very strong feature in the Saturday markets. But the plants have to be stood in groups here and there in the market place, as also have the flowers. They are in summer exposed to scorching sunshine, in winter to sharp frosts, at all times to sudden storms of wind and rain, and thus suffer so materially that whilst the flowers soon flag and wear a stale aspect, the plants also lose very much of their beauty and freshness. A few days since I was in Newbury on a market day. There again I found plants in considerable abundance exposed in the same way in the market place and the streets. Very probably I should find a similar condition of things generally, and it is impossible to doubt but that the plant and flower trade is under such conditions seriously handicapped. It will be long I fear ere municipal bodies will learn to realize the wisdom of making better market provision for perishable things, and yet it must be evident that whilst now plant markets may be held but once a week, yet were there proper glass-covered markets provided the stalls might be nearly always occupied; hence their original furnishing would grow into a permanent source of income. When in every direction market plant and flower growers are complaining of poor returns and dull sales, it is not at all difficult to see that much of the depreciation in value of their products arises from the deplorable condition under which they finally reach the purchaser, as by that time one-half of their value has been lost.—A. D.

— THE TOTAL RAINFALL AT ABBOTS LEIGH, HAYWARD'S HEATH, SUSSEX, for the past month was 1.39 inch, being 0.56 inch below the average. The heaviest fall was 0.23 inch, on the 26th. Rain fell on twelve days. The maximum shade temperature was 76°, on the 17th; the minimum 30°, on the 21st. Mean maximum temperature, 61.11°; mean minimum, 42°; mean temperature, 46.55°, being 7.87° below the average of the past six years. June has come in fine and mild, with slight showers.—R. I.

— "THE NATURAL HISTORY OF PLANTS."—We have received from Messrs. Blackie & Son the second number of this publication, a notice of which appeared in our issue of May 24th. On examining the continuation we see no reason to qualify the high opinion which we have already expressed regarding the work. The treatment remains as careful and exhaustive as ever, and the subjects dealt with in the present volume are of an especially interesting kind. The eccentricities of predatory and parasitic plants have an attraction of their own apart from all questions of botany, and nothing connected with the vegetable kingdom is more likely to rivet the attention of outsiders or lend itself better to successful treatment in a popular lecture. For such a purpose this book affords an invaluable mine of material. Moreover, it encourages the belief that when completed "The Natural History of Plants" will be prized not merely as a work of reference, but as one which even casual readers can peruse with some pleasure and profit to themselves.

— NYMPHÆA PARKERIANA.—This is a white-flowered, very fragrant species, which was discovered in British Guiana by Mr. C. S. Parker, an amateur botanist and collector, in 1824, and was named in compliment to him by Lehmann in 1853. It has the habit and foliage of *N. odorata*; indeed, it was considered to be a form of that species until Lehmann named it as above. The flowers are nearly as large as those of *N. alba*, pure white, with bright yellow stamens and a sixteen to twenty rayed stigma. According to Mr. Watson in the "Garden and Forest," *N. Parkeriana* was cultivated at Kew at least ten years ago, and it was obtained from Kew by Mr. E. D. Sturtevant, of New Jersey, but without name. He flowered it and then lost it. The same fate befell it at Kew. Thanks, however, to Mr. Jenman, of Demerara, seeds of it have lately been secured and sent to Kew, and a portion of the seeds has been distributed. We are likely, therefore, to possess this species in abundance soon.

— POTATO DISEASE IN IRELAND.—Mr. Thomas Carroll's general report on the Irish Agricultural Department during 1892, published a few weeks ago, contains the results of experiments carried out under his direction, having for their object (1) the determination of the mode by which the disease (*Phytophthora infestans*) reaches the tubers of the Potato plant, and (2) the examination of measures for the prevention of, or for the lessening the effects of, the disease upon the crop. The point on which information was especially desired was, whether the disease-producing mycelium reached the tubers of the Potato plant through the aerial and underground stems, or by means of the disease-producing spores falling on the ground and being carried through it to the surface of the tubers. To test this a portion of ground on which Potatoes were growing was covered beneath the Potato stems and leaves with a layer of cotton wool. This cotton wool was carefully placed around the stems, and every means used to have the ground perfectly covered with it, with the view of filtering out the spores that might fall upon the ground. No diseased Potatoes were found on plants protected in this manner, whereas many occurred on plants grown in ground not covered with cotton wool. These experiments, which were very carefully carried out, says "Nature," serve to indicate that the disease is carried to the tubers of the Potato plant through the spores which cause the disease being taken through the earth to the tuber, and not by means of the mycelium finding its way to the tubers through the stem of the plant. An experiment, having for its object the testing of the effect of removing the stalks of Potatoes upon the appearance of disease, with the view of preventing the tubers from being affected, was carried out at the Ballacuttranta School Farm, County Sligo. This system of removing the Potato haulm on the appearance of the disease has frequently been recommended as a preventive. To test it two plots of ground bearing a crop of Potatoes were marked out for experiment. On one the stalks were removed; on the other they were allowed to remain. A comparison of the weights of the crops in each case, and the amounts of diseased tubers, shows, however, that through the removal of the Potato haulm before the crop was matured the yield of crop was lessened without commensurate benefit in freedom from disease.

— PEAT MOSS LITTER AS MANURE.—I would warn persons who make use of peat moss litter manure from the stable, of the manner in which they apply it to growing crops. Instead of using the manure direct from the stable it should be thrown into a heap for a few days to encourage fermentation, turning it over once to allow the rank steam to evaporate. I lately saw three rows of Peas that had been mulched with the manure as it came from the stable, and the haulm was burnt very much the whole length of each row, proving that the ammonia was decidedly too strong for the succulent leaves. Rows mulched with the manure prepared as directed presented quite a different appearance, being especially vigorous in growth and of a deep green colour, showing that when properly managed this manure possesses much stimulating power to growing crops.—E. M.

— POTATOES AND FRUIT AT CARDIFF.—Another indication of the increasing import trade of Cardiff is to be seen in the large cargoes of Potatoes and fruit which are being landed at the West Dock almost daily. Mr. Richard England informed a "Western Mail" representative on Wednesday in last week, that more Potatoes are now being imported into Cardiff than in any previous year, and he himself has chartered two steamers specially for the Jersey and French trade. Another interesting fact is that the quality of the tubers is of a much higher standard than usual. This is owing to the exceeding mildness of the early spring, and the importation has, in consequence, commenced several weeks before the accustomed time. Whilst the atmospheric conditions in Jersey have been so favourable, the recent cold weather in this country has materially affected the home Potato crop, and the price of the old Potatoes has advanced last week no less than £1 per ton.

— CARNATION LADY NINA BALFOUR.—With me this new Carnation fully sustains the high position claimed for it by the raisers (Messrs. Laing and Mather) and when better known is sure to become a general favourite. The blooms are of a delicate blush pink colour, having a pleasing clove perfume, and borne on strong stems without the least sign of the calyx bursting. A few plants of it put out on a south-east border in September last have stood the winter well, and are now vigorous and healthy, notwithstanding the heavy nature of our soil here. Although the raisers have classed it as a border variety it has behaved excellently with me as a pot plant, and from a few plants occupying the Carnation house there has been scarcely a week pass since Christmas but some handsome blooms could be gathered. When the stock of it becomes plentiful enough to allow a houseful to be grown it will be found to be one of our handsomest perpetual flowering Carnations.—N. F. B., Eaton.

— THE LIQUORICE PLANT (*Glycyrrhiza glabra*, L.) is a native of North Africa, Southern Europe, Syria, Persia, and Afghanistan, and is cultivated in France, Russia, Germany, Spain, and China, and also to a slight extent in England, where its growth is said to date from the middle of the sixteenth century. Some twenty or thirty years ago, says the "Kew Bulletin," Liquorice was cultivated in market gardens in the neighbourhood of London, especially about Kew and Isleworth, and more recently at Mitcham. At the present time Yorkshire produces the larger quantity of English-grown root, and the principal seat of its culture is in and around Pontefract. Its cultivation in this particular neighbourhood dates back several generations, the deep, rich loamy soil which occurs here being specially suited to the growth of the plant. The bulk of the Liquorice gardens are situated on the fertile slopes east and north-east of the town, the country between Pontefract and Knottingley being largely occupied by market gardens, in which Liquorice forms an extensive crop.

— CABBAGE COMPETITION.—On Monday in last week an interesting competition took place for three prizes of £5, £2, and £1 given by Messrs. Stuart & Mein, seedsmen and nurserymen, for the heaviest and best specimen of their No. 1 Cabbage. The contest was open to growers in the United Kingdom, and upwards of 200 competitors came forward, representing nearly every county in England and Wales, several from Ireland, and a few in Scotland. The first prize of £5 was gained by Mr. Robert T. Brannwell, Penzance, Cornwall, with a Cabbage weighing 13 lbs.; the second by Mr. Chas. Jacobs, Niton, Isle of Wight, 12 lbs. 5 ozs.; and the third by Mr. Nathan, Philpott, Hythe, Kent, 12 lbs. 2 ozs. According to "The Kelso Chronicle" the following counties stand next in order of weight to the prizewinners:—Sussex, 11 lbs. 7 ozs.; Cardigan, 11 lbs. 1 oz.; Suffolk, 11 lbs.; Devon, 11 lbs.; Gloucester, 11 lbs.; Berks, 10 lbs. 10 ozs.; Worcester, 10½ lbs.; Yorks, 10 lbs.; Cambridge, 9 lbs. 14 ozs.; and Cheshire, 9 lbs. 13 ozs. The best weight in Scotland was Elgin, 9½ lbs.

— DWARF CANNAS.—What are known as Crozy's Cannas are favourite plants now. The magnificent varieties exhibited at the late Temple Show well represented this section in its best manner. For the guidance of those gardeners who had not the opportunity of inspecting these floral gems I have jotted down a few of the most striking varieties. The advantage of this type is its dwarf habit of growth, scarcely one plant was beyond a yard high. The flowers are freely produced, and are decidedly attractive. Duchess of York, yellow, freely spotted with crimson; Duke of York, the base crimson with a distinct golden edging; Marguanti, deep terra cotta self; Charles Moore, red ground, heavily spotted, and clearly edged with yellow; Souvenir de Antoine Crozy, centre of the flower rich crimson, thinly edged with gold, a charming variety; Cheshunt Yellow, rich yellow, most pleasing in point of colour; and Trinignon Charlotte, crimson centre, broadly edged with gold, an exquisite variety.—E. M.

— RANUNCULUS ACRIS POISONOUS.—Mr. John W. Harshberger writes in the "Botanical Gazette" that *Ranunculus acris* must be added to the list of poisonous plants, or, at least, to those which irritate the skin. Specimens of this species, which had been in alcohol for more than a year, were distributed to a class in the University of Pennsylvania for study, and a day or two afterwards an intense itching sensation was experienced by all who handled them, while the skin between the fingers became red and covered with minute pustules like those produced from contact with Poison Ivy. The acrid juice, which is universal in Ranunculaceous plants, and which is usually dissipated when dried, had been evidently extracted from the specimens, and when the alcohol evaporated the irritating principle was left on the hands. Mr. Harshberger adds that the fruits of the Poison Ivy and Poison Sumach are both eaten in large quantities by the crow, and one case is recorded where 153 seeds of Poison Ivy were found in one crow's stomach; while a single pound of dried excrement from a roost in the National Cemetery at Arlington contained 1041 seeds of *Rhus Toxicodendron*, 341 seeds of *Rhus venenata*, besides 3271 seeds of other Sumachs, 95 seeds of *Juniperus virginiana*, 10 seeds of *Cornus florida*, and 6 seeds of *Nyssa sylvatica*.

— MANUFACTURING AMMONIA.—According to an American contemporary, "machinery is now being set up in Newark, New Jersey, for manufacturing ammonia from atmospheric nitrogen. Every gardener knows that nitrogen is one of the essential elements of plant food, and that it is far the most expensive of the elements that are required in fertilising mixtures. It is well known, too, that nearly four-fifths of the great ocean of air that surrounds the earth is nitrogen, and that it is practically useless as food to plants, although they are bathed in it all the time. Recent researches have shown, it is true, that a small portion of this nitrogen can be utilised by certain plants, especially those belonging to the Leguminosæ, but there never has been any available method of transforming the nitrogen of the air into plant food for general use. Of course it is not wise to expect too much from any reported discovery, but if it is true that the sulphate of ammonia can be produced by this new process at about one-quarter of its present cost, this will be one of the greatest boons that the science of chemistry has yet bestowed upon the art of agriculture. If ammonia can be cheaply manufactured from atmospheric nitrogen the discovery means that a great step has been taken toward securing a material increase in the productiveness of the soil."

— MEASUREMENT OF WHITE PINE.—Mr. B. E. Fernow writes to the American "Garden and Forest":—"In the pursuit of an extensive series of measurements instituted by the Forestry Division for the purpose of ascertaining the rate of growth and production of White Pine and Spruce, one of our agents has just reported from Merrill, Wisconsin, the measure of a remarkable White Pine, a windfall, which had been thrown probably a number of years ago, as the sap-wood, mostly rotten, indicates. It measured 200 feet in length, 45 inches in diameter on the stump. As in the Census work of Professor Sargent, the range in height is given to 170 feet (52 meters), it might be interesting to record this unusual length of an old monarch. Altogether, the measurements of the acre-yield on the clay soil of the station, with a good humus cover, are worthy of notice. The height of the Pines, which are mixed with Hemlock and Birch, averages over 120 feet, not a few reach the height of 150 feet; the length of the timber—that is, of the merchantable part—exceeded in many of them 100 feet; the total amounts of timber contained on the acre are not as yet computed. The age is from 200 to 250 years; the diameters are not extraordinary, and range from 30 to 36 inches."

— DUNDEE HORTICULTURAL ASSOCIATION.—At the recent monthly meeting of this Association, a paper on "Hardy Azaleas," by Mr. Hugh Fraser, Leith Walk Nurseries, Edinburgh, was read, in the absence of the writer, by Mr. Hutton, the President. In introducing the subject the writer said that the genus *Azalea* had a very wide geographical distribution, representatives being found in most quarters of the globe. One species had its home on Scottish mountains. Though lacking to some extent the imposing grandeur of the *Rhododendrons*, *Azaleas* stood beyond question in the first rank among hardy flowering shrubs, commending themselves by their profuse blooming qualities and by the exquisite richness of their colours.

— COFFEE ESTATES IN ANGOLA.—We learn from the "Kew Bulletin" that altogether the estates of Cazengo and Golungo Alto number somewhere between fifteen and twenty. The largest of them—one of eight, which are in the hands of the Banco Nacional Ultramarino of Portugal—was described to the writer by the courteous and hospitable manager-in-chief of the mortgaged group as "six miles long and of breadth unknown," the map of it which he was engaged upon being then incomplete. Its crop for 1893 was estimated at 214 tons, and for the first time in the history of the property systematic planting had been undertaken, which was expected to result in the addition of 118,000 trees. One of the smallest of the holdings, which belongs to a British firm, is registered as covering 1424 acres, but only 464 contain Coffee. The bean of this indigenous Coffee is not only of poor flavour, but also of very small size, and on account of the height of the trees and their straggling character is often hardly worth the trouble of picking. An acre of Coffee, with the plants 6 feet apart and properly cultivated, is considered in other parts of the world good for a crop of half a ton. Under such conditions the 464 acres above referred to might be expected to bear at least 200 tons, whereas at present they only yield 35. There is no digging or manuring done on any of the properties. The trees are simply cleared of under-growth and pruned a little, in the roughest and readiest manner, and then left to do the best they can with such nutriment as rots on the surface around. But it is easier to indicate possibilities than to attain them; the problem exists in the usual terms of labour and management, and for those who can solve it the reward is fortune.

VAGARIES IN LABURNUMS.

A FRIEND of mine has two *Laburnum* trees that present features which may, I think, be interesting to your readers, and upon the occurrence of which you will probably be able to throw some light. The trees were bought some few years ago in the belief that they were purple *Laburnums*, but neither of them has ever produced any purple flowers. Each has produced on some branches yellow flowers, on others pink flowers, and on others a mixture of sprays of yellow and sprays of pink flowers. On some of the branches bearing sprays of these two colours I have observed a feature even more remarkable, viz., a spray of yellow flowers growing on one side, and a spray of pink flowers growing on the opposite side at a distance of not more than 3 or 4 inches, the pink spray being again succeeded by a spray or sprays of yellow flowers. One of the trees has also thrown out here and there on some of its branches thick bunches of the purple *Cytisus*. This is a freak of Nature of which I have seen two or three instances in years past; but I have never seen yellow flowers and pink flowers upon the same *Laburnum* trees before, and I do not remember ever to have either read or heard of such an occurrence. I enclose herewith sprays of the *Laburnum* blossom, and also of the *Cytisus* blossom.—RUSTICUS.

[We have seen several trees similar to yours, though they are not common in gardens. It is known as *Cytisus Adami*, and is a graft hybrid between *C. Laburnum* and *C. purpureus*, obtained by Mr. Jean Louis Adam in 1825 in establishing the purple species on the common *Laburnum*. In this process it is supposed that a cell of the one species became divided and united to a cell of the other, and the result has been a plant producing not only flowers of each species separately, but others partaking of the characters of both. There are other instances in the vegetable kingdom in which a similar union of cells is believed to have taken place, but *Cytisus Adami* is the best known and best established. We recently observed a tree of *Cytisus Adami* in Mr. Smee's garden at Hackbridge, Surrey. It was also flowering in Mr. Van Geert's collection a few weeks ago. In the same collection we observed that where the golden leaved *Laburnum* had been grafted on young stocks of the ordinary green leaved kind, and the scions "took," but were subsequently destroyed, that the growths from the stocks were not green but more or less yellow, some being quite as bright as if they were growths from the scions. There were dozens of examples of this. It is remarkable that grafting or budding with one variety will occasionally, as the tree grows, produce three or four forms differing in colour and the character of the leaves and racemes. We have not only seen purple and yellow flowers on the same tree but about half and half in the same raceme. There is no accounting for the vagaries of *Laburnums* when grafting has been resorted to. Your plants are named in another column.]

A TRIP TO ANTWERP.

A FEW years ago when the British tourist crossed over to Belgium he found, if his watch kept time accurately, that it was a quarter of an hour behind when he passed the Cathedral clock at Antwerp as he floated up the Scheldt. If the watch had gone right on the way it would be wrong on his arrival, whereas if it had gone right it would be wrong. This apparent paradox once puzzled a rustic voyager, and when the cause was explained to him he simply replied he had "forgotten the sun," meaning the longitude. But all is altered now, for Greenwich time has been adopted in Belgium, and the change appears to give general satisfaction. A few opponents pretended to fear it would lead to serious disturbance, if not to a revolution; but there was only about a week of grumbling in places at the change, then all was peace.

Two or three things will strike the wandering pilgrim before he has been long in the city. He will find the dogs working with a will, and generally looking happy and well (much better than the cab horses), as they trot along with milk or vegetable carts, or in taking groceries round. True, they may pull and pant when yoked with a man or woman to a load of sand, and the tender-hearted humanitarian will be apt to pity them, while possibly overlooking the equal exertions of their human helpers. Then the explorer, if he has tender feet, and the weather is hot, will be apt to "feel" the pavement, and think it is

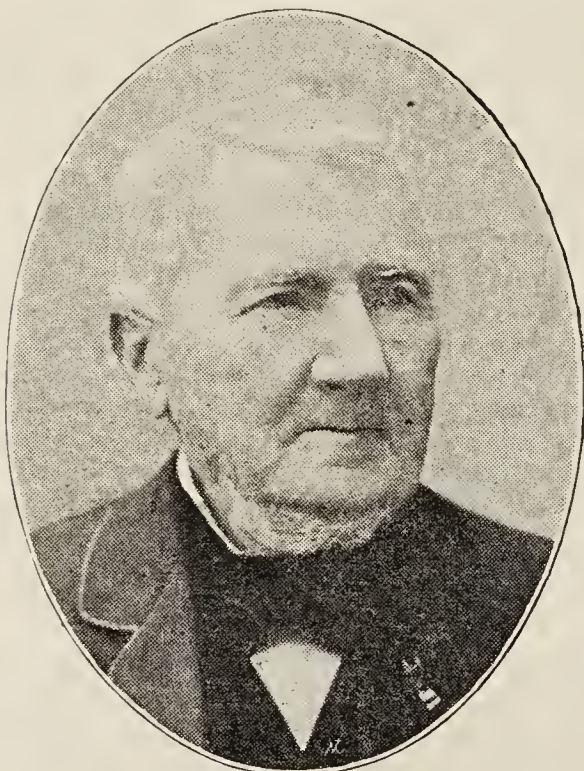


FIG. 73.—MR. CHARLES VAN GEERT.

open to improvement. It is as well, however, not to complain, or he may be told Englishmen are spoiled by luxuries. It is curious that there are a large number of persons in every country who seem to think that every other country is better than their own. Those persons, however, appear to do the best who make the best of their opportunities whatever they are and wherever they may be.

GOING TO THE EXHIBITION:

The tired wayfarer can do one thing better in Antwerp than in England—namely, "jump into a tram." The Antwerp cars are delightfully simple. They have a top, bottom, and ends, but no sides in summer, with a foot-board the whole length just above the ground, and travellers step on and off on either side, taking or vacating the seats that are arranged across the floor. These vehicles are light, drawn by one horse, start from busy points every minute (every half minute on Sundays), fares low, and the company pays about 25 per cent. on capital. It is better to be a tram shareholder in Antwerp than London. It is by these conveyances that so many persons go to the Exhibition. They appear to be always going, and it is certain many thousands will find their way there during the season.

It must be nearing completion now. A month ago the most interesting feature was "Old Antwerp," an accurate and realistic presentation of the city 300 years ago. The houses are tenanted, and the trades conducted as of old, all connected with the city of the past, wearing the peculiar habiliments of the time according to the social position and vocation of the wearers. Old London was represented at the South Kensington Exhibition a few years ago, but Old Antwerp excels it in extent and completeness. The greatest possible care has been exercised on the question of fidelity in the execution of all details, and Mr. Max Rooses, the eminent archaeologist and Director of the famous Plantin Museum, has won golden opinions for his researches that were essential to the carrying out of the work. His daughter in ancient costume had the honour of an introduction to the Queen on the opening of the Exhibition, and presented Her Majesty with flowers. The mention of this young lady leads directly, but through two generations, to the

mention of another personality of Antwerp, and undoubtedly the chief personality in horticulture there, for Miss Rooses is the granddaughter of Mr. Charles Van Geert, who was the guide, philosopher, and friend of the writer of these lines in his wanderings—and blunderings. In the latter capacity he is an expert when he gets out of his familiar groove, and he had a narrow escape in getting switched off to Holland without "bag and baggage" instead of into a local train. Subsequently his friend kept him right abroad, no easy task, though not at all difficult at home, as at least so people say, though he is himself conscious of his proneness to go wrong.

AN OLD CITIZEN.

In a great gathering in Antwerp a gentleman of position remarked to this right and wrong sort of a man, "Ah, Mr. Wrong (he was right there), you have—a-what-do-you-call-him?—oh! a 'Grand Old Man' in England." "Yes, we have several fine men in England." "Ah! but you know who I do mean; and we have a 'Grand Old Man' in Antwerp, and here he is—Mr. Van Geert." Though he would be the first to waive any claim to this distinction, yet if long experience, highmindedness, great professional knowledge, linguistic acquirements, and universal respect entitle to it, Mr. Van Geert cannot cast it aside, and it is hoped he will not object to the publication of his portrait.

As to long professional experience he would be likely to tell the modern Britisher more about his country and some of its former inhabitants than he himself knew. He would take him back to the pre-railway days and journeys up to London, thence to Exeter and other places by coach. He would interest him by vivid references to the old Dahlia days and Dahlia men—Colvill, Mountjoy, Widnall, Brewer, Brown, and others, and talk of Loddiges of Hackney and Chandler of Vauxhall as if they were in existence now. The Dahlia reminiscences might perhaps bring out something that is new to the present generation. It should be said that Mr. Van Geert is a gentleman of wealth. He may almost be described as the creator of a town, as he certainly is of splendid streets, one bearing his name and another that of horticulture, Rue de Van Geert, or Van Geert Straat, Rue de l'Horticulture, Rue Doddeens, and so on, on land he bought in past days for his nursery.

As every effect has its cause, so it is true that important results have not infrequently occurred from causes which at the time might have escaped the notice of many. It will not perhaps be far from the truth to suggest that the foundation of Mr. Van Geert's present position rests to a large extent on Dahlias, and to the exercise of his observant powers on one of his visits to England, which commenced about sixty years ago.

It was something in this way, but first let it be said that the founder of the Antwerp Nursery, the father of the present proprietor, was originally engaged in nursery work in Ghent as a foreman, and had achieved fame as a propagator. He purchased a small plot of land outside the old fortifications of Antwerp, and commenced business there about 1825. Another member of the family acquired land in Ghent, and was a pioneer of the great system of nurseries that became established. The name is still familiar there, but Mr. Auguste Van Geert eventually sold his heritage, and joined the rich brotherhood of brewers. There is, however, one (perhaps more) direct link of the name with horticulture, Pynaert Van Geert. All British gardeners do not know that when a lady of property marries in Belgium her name is retained with that of her husband's, and hence Mr. Pynaert's added name—Van Geert.

A DAHLIA DISCOVERY.

To return to Antwerp. Mr. Charles Van Geert became a partner with his father about 1848. The senior, it would seem, gave his attention to the multiplication of plants, the junior mainly to their distribution, not at home merely, but over the different countries of Europe through which he travelled, no doubt perfecting himself in the languages at the same time. In those early days the Dahlia loomed above the horizon, and took the world by storm. It would seem as if plants of new and famous varieties could not be increased fast enough, and it is to be noted that the method of increase was then rather slow—division of the tubers. Then it was that the experienced propagator made a discovery. A very simple matter it may appear now, but it was very different then. Fancy if a Chrysanthemum grower could hit on a method of increasing the new varieties, which thousands of persons long to obtain, twenty times more quickly than by existing methods! Would he not be in luck's way—a veritable child of fortune? Charles Van Geert the first, then, discovered that with the aid of brisk heat the young growths of Dahlias could be rooted as cuttings, and there he touched gold. He forced and topped and rooted over and over again, raising a hundred plants of a new and scarce variety in the same time that a dozen were produced in the then orthodox way. It is not conceivable that the fact was proclaimed from the house tops, and it was not very difficult to keep the secret long enough for it to pay in the obscure little nursery to which floral pilgrims had not yet found their way. Charles the second, perhaps, did not desire their presence in large numbers at that particular time; at any rate, instead of inviting the Dahlia *cognoscenti* from other lands to see the new methods at home, he thought it better to go and see the Dahlia shows and growers abroad. They would feel it a great compliment, no doubt, that a fancier should travel so far by sea and land—in those non-travelling days—to admire their precious treasures. Then, when he would select the best and give long prices for them, it may be expected they would treat their visitor well, get all the orders they could out of him, sleep the sleep of the just, and, mayhap, dream about the foreign man losing the delicate "roots" and

coming for more another year. It is even conceivable that some of the old John Bulls, who had a particularly good opinion of themselves, might go so far as to think the young stranger had more money than brains, and they might as well have a little of the former while it lasted, leaving him to gain wisdom with experience as he arrived at years of discretion. Little would they think they were dealing with a bland young floral Napoleon, conscious in the strength of his reserves and of his power to raise Dahlias in battalions large enough for distribution all over the

occasion on ordering the cabman to drive to Colvill's Nursery he could not find it. It had disappeared, and on its site were large houses and a Colvill Terrace.* A glance sufficed for comprehending the enormously enhanced wealth of the site, and this gave birth to an idea. Antwerp was growing in wealth, and gunnery in power. The old fortifications were useless, and new ones would become necessary at a greatly increased distance from the city. Why not purchase the then cheap country land around the homestead for extending the nursery? Charles the first



FIG. 74.—CORNUS FLORIDA. (See page 454.)

world. Yet that is what happened as the fruits of a fortunate discovery now for the first time recorded in the *Journal of Horticulture*, more than sixty years after the event.

A LOST NURSERY AND A NEW CITY.

Of the Dahlia growers visited in England by Mr. Van Geert in his early campaigns all have long since passed away, but he remains with a mind as young and intellect as bright as ever, physically healthy and active too, but a bronchial trouble has to be managed by equability of temperature during the winter season. He profited in another way than by Dahlias in consequence of one of his visits to England. On one

could not see his way to a speculative extension, but Charles the second could, and was at liberty to invest his own money, and from time to time did so until he secured a considerable area. Soon afterwards the insecurity of the city was mooted, and the question of better defences raised, culminating in a committee of defence and deputations to the Ministers and King. In a word new fortifications were demanded by the citizens, and the claim could not be ignored. The Act was passed, the lines laid down, and the country land within them went up at a bound to building value, this increasing as new streets extended, till

* Colvill's Nursery was in the King's Road, Chelsea, exactly opposite the Duke of York's School.

the nursery practically stood in the centre of a new city. This was foreseen and prepared for by the purchase of an estate at Calmpthout, distance about forty minutes by rail, and when this was stocked the city nursery was, in the course of a few years, covered with fine houses, all but a small plot, the original purchase of the founder, this being retained as a little pleasure ground by the present proprietor in the form of a miniature nursery, ornamented with stately Bays, also Clethra arborea, fine; Choysia ternata on 4 feet stems, and Eugénias in pots and tubs. Here, too, is the original bush of Magnolia "parviflora," introduced from Japan, a small flowering specimen of which, exhibited by Messrs. Veitch & Sons, was certificated at the recent Temple Show, though according to the Kew authorities the true name is Watsoni. It is a distinct and beautiful form, hardy, dwarf, and floriferous, with sweet wax-like flowers, first resembling Tulips in shape, then expanding like a Clematis. There are long ranges of pits, perhaps the old Dahlia pits, still retained, and a more modern Palm house filled with plants of the hardier kinds grown "cool," and now in demand for the exhibition buildings, cafés, kiosks, and other adjuncts for which they are so well adapted.

CALMPHTHOUT.

Calmpthout has been mentioned. It has also been described in past years, but a brief reference will be fresh, at least to new readers, and not resented by old friends. To reach it we start from the station de l'Est, near the Zoological Gardens, and about eight minutes from the home nursery in the Rue de la Province Nord. The station of Calmpthout is at the nursery gates, and its entrance is, in its way, unique. The boundary hedge, if it may be so called, is embowered with Ivy and Purple and Copper Beech. On entering we are in a colonnade, wide and lofty, reaching across the end. The flat roof was at first formed with Ampelopsis, but is now well covered with the horizontally disposed branches of the Beeches.

From the colonnade, entrance is had to the different ranks, which are divided by closely cut hedges of various Conifers. These afford valuable shelter, have a pleasing appearance, and bring everything, so to say, under the eye. This is what may be termed the "old" nursery. The central avenue is flanked by coloured Beeches trained like church spires, and in the front of them specimen Conifers—each in its allotted square of low clipped Conifer hedge a foot or two high—quite a Dutch arrangement it may be supposed, yet convenient and pleasing. But the nursery has extended far beyond the original lines, and is probably destined to spread still farther. It is the Great Belgium emporium of all that is best in the way of evergreen, deciduous, and flowering trees and shrubs. The extent and variety of the collection is represented in the very clear, compact, instructive, and well arranged catalogue. The descriptive notes are in French, but the proprietors could give them just as well in Flemish (of course the home language), English, German, and Italian, in which they conduct correspondence. The collection is very rich, but only one or two things can, for obvious reasons, be specified here as attractive at the moment.

The most beautiful flowering tree was Briot's Scarlet Chestnut, *Æsculus Brioti*. The familiar type is put in the shade by the glowing richness and massive spikes of the fine acquisition. It is to be found in some home collections, and when its character becomes known trees will be coveted for parks and pleasure grounds.

One of the flowering shrubs, or low trees, which attracted the most notice in May was a species that appears to be too little known or grown—*Cornus florida*. The specimen was in pyramidal form, 9 or 10 feet high, and was covered as with a number of large white fluttering butterflies. The true flowers are simple enough, and yellowish; it is the large ivory white bracts that give beauty. These are to the shrub what the coloured bracts are to the Poinsettia, and which invest the plant with attractive force. A flowering spray of *Cornus florida* is represented in the illustration (fig. 74) exactly as it was cut from the tree.

A very distinct shrub, grown for the beauty of its foliage, was extremely effective in contrast with the flowering *Cornus*. This was *Parrotia (Hamamelis) persica*, with large glossy leaves with coloured margins that deepen to purplish crimson in the autumn, though the marginal colouration is prominent in the spring. It is quite hardy, from Turkestan, and much valued at Calmpthout.

A novelty in the way of shrubs well worth noting is what may be termed a hardy Orange, which flowers freely and produces fruits in the open air, the latter resembling Mandarin Oranges, though not ripening. This is *Limonia trifoliata*, also known as *Citrus triptera*. It comes from Northern China, and receives no protection in winter. The shrub is in somewhat close bush form, 4 to 5 feet in height and diameter, with bright green glossy trifoliate leaves, and long spines lurking among the foliage. The bush is growing in sandy soil, and has withstood many winters uninjured. The position is sheltered from the north, and it may be assumed the wood ripens well. The species has been exhibited at Westminster, and described as hardy at Coombe Wood.

Space is exhausted or many other good things could be mentioned. It can only be said that the nursery is diligently superintended by Mr. Charles Van Geert, junior, Charles the second he is now (and he has a Charles the third—a promising young man at the University), who inherits his father's love for all that he grows so well, also his high character, urbanity, and linguistic ability—a combination that renders a few hours in the company of the Van Geerts very enjoyable. A little more remains to be said in connection with the trip to Antwerp, but it cannot be said now, in view of the printers' scowls and the Doctor's knife.



ROSE SHOW FIXTURES IN 1894.

- June 13th (Wednesday).—Colchester.†
- „ 20th (Wednesday).—Isle of Wight (Shanklin).
- „ 26th (Tuesday).—Westminster (R.H.S.).
- „ 27th (Wednesday).—Windsor (N.R.S.) and Richmond (Surrey).
- „ 28th (Thursday).—Canterbury, Eltham, and Sutton.
- „ 30th (Saturday).—Sittingbourne and Brockham.
- July 3rd (Tuesday).—Farningham, Bagshot, and Diss.
- „ 4th (Wednesday).—Croydon, Reigate, Tunbridge Wells, Ealing, and Ipswich.
- „ 5th (Thursday).—Hereford and Norwich.
- „ 7th (Saturday).—Crystal Palace (N.R.S.).
- „ 10th (Tuesday).—Gloucester and Wolverhampton.*
- „ 11th (Wednesday).—Hitchin and King's Lynn.
- „ 12th (Thursday).—Bath, Harleston, Woodbridge, and Workson.
- „ 14th (Saturday).—New Brighton.
- „ 17th (Tuesday).—Helensburgh.
- „ 19th (Thursday).—Halifax (N.R.S.), Halesworth, and Trentham.
- „ 21st (Saturday).—Manchester.
- „ 24th (Tuesday).—Tibshelf.
- „ 26th (Thursday).—Southwell.
- „ 28th (Saturday).—Bedale.
- Aug. 1st (Wednesday).—Chesterfield.

* A Show lasting three days. † A Show lasting two days.

Any date of Rose shows, or of other horticultural exhibitions where Roses form a leading feature, not named above, I shall be glad to receive as soon as fixed, for insertion in future lists.—EDWARD MAWLEY, *Rosebank, Berkhamsted, Herts.*

DATES OF ROSE SHOWS.

AFTER all the prognostications, warnings, and threatenings to which we have been treated during the last five or six weeks, the following announcement issued by the "Ryde Exhibition and Horticultural Association" will perhaps come as a surprise:—"The Committee of the above beg to inform their patrons that in consequence of the lateness of the season they have postponed the Rose Show from the 7th to the 14th June."—X.

SOME NOTES ON THE EFFECTS OF THE RECENT FROST.

I HAVE now heard from the four points of the compass in regard the frost of the 20th. In England, apparently Yorkshire, Windsor, Notts, Hitchin, Dartford, and Croydon have been hit hardest, the rosarians in those districts having undoubtedly suffered severely from its effects. At first there were cries of alarm from East Anglia, but now only partial disablement is reported. In the west, Bath has suffered slightly, but near Bath, at Mr. Hill Gray's, no damage was done; neither has there been any destruction at Birch Vicarage. Colchester seems to have escaped; the high winds which followed the frost appear to have done more harm than the low temperature of the 20th and 21st. The weather now seems improving, and some of our plants may yet enable us to put in an appearance at the Rose meetings, but not in the form we hoped to show this year.

I have recently come across the following old piece of rhyme, known in far country places:—

"The farmer went to his Wheat in May,
And came right sorrowful away;
He went to his Wheat again in June,
And came away singing a merry tune."

I thought it such a good omen, and so happy in every way at the moment, that I send it to you so that we may all be cheered up a bit. The effect of the frost on individual Roses seems to have been remarkably uniform everywhere. The dark varieties, especially Charles Lefebvre, Sir Rowland Hill (C. Lefebvre sport), A. K. Williams, Charles Darwin, Comte Raimbault, Victor Hugo, Louis Van Houtte, Horace Vernet, and Gustave Piganeau seem very hard hit; whereas La France, Mrs. John Laing, Ulrich Brunner, and Gabriel Luizet have not suffered so much. It may be noted that the former are dark foliaged and the latter light; these little points are worth considering. I was much surprised to see the effect on Charles Lefebvre, which I thought could bear any frost; but I suppose the damaged shoots were very sappy from the rapidity of their development and growth. Some of my Teas are injured, even the buds of the vigorous Edith Gifford have suffered. Some Cleopatras, however, which I have always looked on as exceedingly delicate, are unhurt; whereas Marie Van Houtte, considered extra robust, is hurt! These are peculiar incidents. Comtesse de Nadaillac does not seem injured, so far as I can see at present; but the sun will soon show anything seriously wrong.

The remedy for all this destruction is the crux. With all my acquaintance and correspondence amongst the crack growers I cannot truly say that one of us seems certain of what to do. Some of us have cut away what we know to be useless, whereas others are letting the

plants take their chance. We shall all know "all about it" in another month or six weeks, and the decisive action of some, or the masterly inactivity of others, will be shown to be right—perhaps both will be right in their way. In any case I have followed Mr. Lindsell, and so has Mr. Romaine, in his treatment of the wounded; whether it be right or wrong we are in good company.

THE LATE REV. F. H. GALL.

I should like to add a few lines of tribute to the memory of this courteous, kindly, and genial old gentleman. It was only on last Whit-Monday I had a long chat with him on the Hitchin Cricket Ground, and he was saying in a jocular way that he was going to compete for the Queen's cup. In regard to one slightly jarring note (*cui bono?*) in Mr. D'Ombain's otherwise kindly remarks (page 435), I would say that I also have often heard people wonder (very naturally, I think) whether Mr. Gall had a living and officiated, but I am happy to say that I never heard anyone speak in anything but the most kindly and sympathetic way of his great infirmity, which must have been a great trial to him. Would that all rosarians were as enthusiastic and kindly hearted as he was, and as unselfish in their ways.—CHARLES J. GRAHAME.

NATIONAL ROSE SOCIETY.—DATES FOR METROPOLITAN SHOWS.

UNDER the above heading (page 414), and referring to the N.R.S. annual meeting, 1892, Mr. Grahame says, "Mr. J. Bateman prophesied a terrible season of arctic character for 1893." As prophesying of any sort with reference to so proverbially uncertain a matter as the British climate is a subject I have never been rash enough to venture upon, perhaps you will allow me a little space in which to say that at the meeting in question I did nothing of the sort which Mr. Grahame alleges. All that I did was to allude to the fact that a well-known weather chart then just issued for 1893 stated we were likely to have a frost as late in the year as June. I think you will agree that there is a great difference between doing anything (whether "prophesying" or libelling, or anything else) oneself and alluding to what has been done by another.

Farther down on the same page your correspondent says, "One of the speakers . . . stated that about two counties were generally represented at the Palace." I am sorry to have again to contradict Mr. Grahame, but as a fact no one stated any such thing. Mr. Grahame himself was the only one who mentioned any number of counties as having been represented in the previous season, and he said sixteen, not two. What really happened was this:—One of the speakers in favour of an early date said that a late fixture would prevent Kent, Surrey, Sussex, Devonshire, and Somersetshire showing in their proper form, and in reply to this I remarked that the history of past shows did not bear out the assertion, but that, even if it were so, it was not right for a "National" Society to make arrangements for the benefit of four or five (not two) counties only, to the exclusion of the rest of the country.

Expressions of opinion upon subjects your correspondents may be free to indulge in, but when (without any permission or right) they bring the names of persons into their statements of facts (?) they should at least take care to be correct in what they write.—JNO. BATEMAN, *Highgate*.

ROSE CONGRESS AT THE ANTWERP EXHIBITION.

As previously announced in the *Journal of Horticulture* a Show of Roses and other flowers will be held at the Antwerp Exhibition on July 1st and 2nd. In connection with this a Rose Congress commences on Sunday, July 1st. A programme of the proceedings has been issued, and amongst other subjects discussed will be the formation of an International Rose Society, synonyms of varieties in cultivation, a popular vote as to the best 100 Roses, best methods of managing Rose shows, different species for grafting, and the reduction of the number of varieties of Roses in catalogues. Those persons who intend to take part in the Congress should communicate with Mr. J. B. Lenaerts, 60, Rue des Fortifications, Antwerp, Belgium, from whom further particulars may be obtained.

ROSES IN NEW ZEALAND.

WE must all try to help "Rimu" (page 435), the rosarian brother on the other side of the world, in his perplexities, and I hope someone will do it better than I can. The best book on the species is "The Rose Garden," by Mr. William Paul; and the whole matter of classification is in an unsatisfactory state, and is likely to become still further confused as hybridisation goes on, unless fresh, broader, and wider lines of demarcation are agreed upon.

It is difficult to distinguish *Rosa centifolia* from *R. gallica* by mere description, or even in any case; or *R. arvensis* from some of the old forms of *R. multiflora*, unless it be that the former species has more slender and rapidly running shoots, and is generally more hardy; but *R. alba*, not being a climber, is easily distinguished from these, and is probably meant by the shrubby bush bearing white flowers once a year.

In Polyanthas, the variety known as *Polyantha simplex*, and now being tested as a stock, according to the recommendation of Mons. Vivian Morel at the Chiswick Rose Conference, is of strong climbing growth, while *Pâquerette*, with its charming companions, is miniature in growth as well as in flower. The pink Rose, used as a stock and called "Celini," would, I suppose, be *De la Griffierie*, but I do not know the Seven Sisters.

Many Roses are more or less red-barked, though *R. rubrifolia* is conspicuous in this respect; but why does "Rimu" bother about single

and summer Roses, when he can obtain and grow Hybrid Perpetuals, Teas, and Noisettes? A climbing Noisette called Rev. T. C. Cole is unknown to me, and so for the matter of that is Madame Zoutman. In sulphide of potassium it is the sulphur which is the specific for mildew, applied in a different manner and form doubtfully better than the old way.—W. R. RAILLEM.

ROSE NOTES.

ONE rather expected a letter in to-day's Journal (31st May) from Mr. C. J. Grahame suggesting a date later than July 7th for the N.R.S. Crystal Palace Show, but perhaps he is sitting penitent in his "back seat." During the somewhat heated discussion on the date of the C.P. Show I kept silence, not because I had no opinions to air, but because of the practical uselessness of airing them. However, I can remember quite as many dates fixed which have proved too early as those fixed too late. The month of May this year has upset all calculations, and has doubtless disappointed woefully many of our most enthusiastic exhibitors. The weather in Herts, Beds, and Surrey must have been exceptionally severe, while in some parts of East Anglia great havoc has been wrought. In my own garden, which stands high, no damage worth noticing has been done. Potatoes and Runner Beans were not touched. I have just been through many acres of early Potatoes, and failed to find a single black leaf. Of course, owing to the cold winds, rain, and hail, all vegetation has been stopped. Mr. Lindsell's letter on page 435 is sad reading, but he should not give up all hopes. It is wonderful how quickly Rose trees recover themselves after a fall, providing really genial weather immediately follows and continues; a second check, of course is fatal to an exhibitor's hopes.

We in north Suffolk must be considerably later than our more southern friends, as my first "Gloires" on the house are only now opening, and yet I have a few Teas almost out in the open borders. Rubens has usually been the first to bloom with me, but this year Jean Pernet, strange to say, touches the tape first, followed by *Souvenir d'un Ami* and her "princely" offspring, with Marie Van Houtte and Madame Lambard in close company. Mr. Dunkin (page 433), I notice, is in favour of early pruning, weather permitting, and his remarks remind one of an article on the subject of pruning, in the "Rosarians' Year Book" of 1880, by the late Mr. George Baker. Mr. Baker wrote these words:—"Many, I know, advocate delaying the work [of pruning] until the month of March, though I confess I prefer rather an earlier date, and should say the last week in February, provided, of course, the weather be genial, for the nature of the season must always more or less guide our decision. My own experience has induced me to be in favour of the earlier date, because I fancy Rose trees cut about that time usually break more slowly and evenly, and by so doing are less likely to be injured by any low change of temperature we may afterwards experience. As the spring advances they also make more growth than those trees that are cut later."

I have often wished that the N.R.S. would reprint in leaflet form this article on pruning by the late Mr. G. Baker, and enclose a copy to each member of the Society when the annual report is sent out. I am very glad to hear that the Roses under Mr. H. Dunkin's good care have escaped injury. About two miles from Warwick Castle, in my brother's garden, the plants have been injured.—EAST ANGLIA.

P.S.—Mr. C. J. Grahame objects to your correspondents adopting a *nom de plume*. Perhaps he keeps a private secretary! My own experience, after signing my full name and address, has been such as to more than justify the modest request of the Editor of the Journal, "that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense."—E. A.

ROSE JOTTINGS.

EXCEPT in a few cases rosarians are probably in better spirit about their favourites than two weeks ago. We certainly experienced a rough time, both as regards frost and cold winds, but there is not so much damage in my district (Sussex) as I feared a short time back. Warm weather and showers are hurrying the growths on again, and although we are likely to suffer with deformed flowers from the earliest buds, the main crop seems fairly safe.

Summer pruning of climbers and extra vigorous growers has been a practice with me for some years, and we shall soon commence upon walls and among a few which are pegged down in front of a shrubbery. In the latter case we cut away the flowering wood and tie up the new shoots to a neat stake; meanwhile pricking out some annuals in the space between each stool. This avoids the blank and gives a welcome change of colour. I do not remember such as Madame G. Luizet to flower more freely than they promise this season, and Margaret Dickson is almost equally full as regards numbers, but I am disappointed to find it so thin under glass, and also last autumn out of doors.

Stocks for budding need a little attention now. Briars for standards must be confined to the few breaks to be operated upon, or we shall have considerable difficulty later on to work among them, seeing they are breaking and growing so freely. Dwarf stocks may also be looked over and any suckers removed. Briar seeds sown last spring did not germinate during 1893, but this season are coming up in a more than usually satisfactory manner, while those transplanted during the past season look very promising; indeed, all Rose stocks present a vast contrast to last season at this time.

Several Hybrid Perpetuals are coming in bloom, while Teas and Noisettes of the earlier kinds are already expanded. Garden Roses, as the semi-doubles and singles are now styled, have also come on apace during the last week, and are very showy, Austrian and Persian Briars, Scotch Briars, Rugosa's, and others being quite gay. We never had Maréchal Niel better on open walls than this season, and the same may be said of L'Idéal, William Allen Richardson, Rêve d'Or, and several more. As a rule the Maréchal is too precocious and the buds nipped. This season a large number were over before the late May frosts. The neighbouring gardens are already quite gay with Roses, as much so as at the end of June in most seasons. I do not see much difference in this respect and last year, but the blooms and growth are considerably cleaner and quite minus the distressed, parched appearance they presented at this date in 1893.

I note a somewhat curious omission from the list of new Roses in our National Society's report. Mrs. W. J. Grant does not figure under the name it won the gold medal of 1892, nor as "Belle Seibricht." We shall, doubtless, have to call it by the latter, seeing it comes into commerce under the new name. It is a pity so promising a Rose should be comparatively lost under this name, as so many of us will associate Mrs. W. J. Grant with the fine blooms exhibited by the famous Irish firm who raised it.

I am pleased to see the note by Mr. Grahame (page 434), calling attention to the important alterations in the new schedule just issued. It seems to me the list is now as near perfect as possible, and has a remarkably fair and open aspect. No fear of large growers "swamping" the smaller ones. A class for those who never won before, also one for new members, is certainly giving all of us the chance wanted, and it now only remains to go in and win, each one upon his merits, and in the fairest way it is possible to bring floral competitors together.

Exhibition boxes will soon need hauling forth and repairing, ready for another rough time of travelling, mostly by night, and when porters are in a greater hurry than ever. Labels and tubes, and many other little details so essential towards pleasureable staging, without that harassing hurry which is sure to ensue when such petty items are left until the last moment, under the idea they will need little time. All of this is needed for cutting and boxing just at the last, and one never seems to have a surfeit of time at the show, even if an over-night arrival.—PRACTICE.

RIPENING AND PRESERVATION OF FRUITS.

(Continued from page 381.)

Now we have reached the point where we wish to keep our fruit either as it is, in the fully ripe condition, or in a condition somewhat short of full ripeness, till a little while before it is to be consumed; or, thirdly, in some artificially prepared form, as when dried or canned. As we all know, an immense amount of care must be bestowed on the fruit in order to keep it unspoiled, whether it be one or another of these three conditions that is to be fulfilled.

There are two general reasons for this. First, those same agencies that have worked within the fruit to produce the chemical changes involved in the ripening, a part of which changes I have briefly explained, are still in full force in the ripe fruit; ferments they possibly are, still active since nothing is done, except when the fruit is canned, to make them inactive; and their action on fruit which has reached its best stage of ripeness can be only harmful. Any change in fruit which is already at its best cannot make it any better, and can only make it poorer.

Second, living organisms stand ready, great armies of them, to attack the fruit from without, settling down all over it and starting decay and rotting wherever there is a weak or broken skin. Those of you who have attended these meetings regularly have heard a good deal about bacteria; those exceedingly minute living beings which are, according to their kind, friends or enemies of the farmer and the horticulturist. His friends, when they help to convert all the nitrogen of dead animal and vegetable matter into nitrate, the most useful form of nitrogen food for new plants that arise out of the ruins of the old ones that have done their work and died; his friends when, working in the growing Clover, or Pea, or Bean, they give to the farmer or gardener the power to draw upon the unlimited stock of free nitrogen of the air, for the making of nitrogen manure for other crops which must get their nitrogen from the soil or not get it at all; his enemies when he must fight them all the time to keep his meat, or his milk, or his vegetables and fruit from spoiling.

Nothing is safe from them, for the dust of the air is charged with them, the dust on our clothes, and on our furniture, on the shelves in our closets and cupboards is charged with them, and they are always ready to begin work afresh whenever, in the travelling that they are forced to do as they are borne hither and thither by currents of air, they settle down on any dead vegetable or animal matter. Fruit when once separated from its vine or shrub or tree, becomes dead vegetable matter, and, therefore, is open to the attacks of these unfriendly bacteria.

A short time ago an English chemist, and at the same time a good bacteriologist, undertook to determine approximately how many bacteria there were in the dust that settled out of the air under various con-

ditions in a given period of time. This number ranged all the way from about twenty up to 8000 on a square foot of surface in a minute of time. The highest figure was obtained in a barn where flail threshing of grain was going on, and where the air was full of dust. In a museum on a holiday, when a large number of people were moving about, the number falling on a square foot in a minute was 1750; and I might give many other interesting details of the results that were obtained.

It follows from what I have said that fruit which has been exposed to the air, as is, indeed, the case with all fruit, will be liable to have bacteria on its surface. Both for proof of this, and to satisfy my curiosity as to the number of this little people likely to be found on fruit as usually exposed, I asked one of my students who is engaged in this line of study to find out for me how many bacteria there were on an Apple about as big as my fist, which I took from a basket of the fruit that had recently been left in my cellar by the grocer. He did the work very carefully, and reported 115,000—quite a good sized city on a very small piece of land one would say; and yet not much more thickly settled than a Western prairie, since it would take 400,000,000 of these beings to cover 1 square inch of surface. But they were there, nevertheless, scattered over the surface of this Apple; some of them very probably of the kind that starts the rotting of fruit, and ready for work whenever a place should be opened, or weakened in the skin where they may begin. Beset, then, as the ripe fruit is from within, in such a manner that it cannot grow better, but must grow poorer, if it changes at all; and beset with worse enemies from without, is it any wonder that the soft, ripe Strawberry or Blackberry or Peach, or the mellow Apple or Pear, is hard to keep? There is but one really effectual and practicable way to meet this double evil tendency, so that it shall be entirely suppressed, and that is to heat the fruit up to the temperature of boiling water. Thus all power for evil of the ferments working within, and of the bacteria that stand ready to work from without is permanently taken from them, and we have only to prevent exposure to air completely, so that no fresh bacteria dust can come in contact with the fruit. This is the familiar process of canning fruit. Complete drying also stops the action of these ferments and bacteria as effectually as heat does; but really complete drying, leaving no moisture at all in the fruit, would yield a product so far removed from the original fruit that it would have little value; and if the drying is not complete, as in the evaporated Apple, we must resort to other and additional means, such as cold storage, if it is desired to carry the fruit through the warm weather of the following season. This low temperature of the cold storage is of itself a means of checking the tendency to decay, for ferments and bacteria do not work well in the cold, and the latter not at all at very low temperature. But as there are limits to which the temperature must not be allowed to fall, if we would not spoil the fruit by the cold itself, this is but a partial and imperfect means of preservation. Finally, there are certain chemical substances, like borax, boracic acid, salicylic acid, sulphurous acid which act as poisons on bacteria; but as they can be applied to fresh fruits only in such a way that harm would come to those who eat the fruits, their use is out of the question in such cases.

Therefore it is that, if we want to enjoy all the lusciousness of the ripe fruit, we must usually eat that fruit just then when it is ripe. Canned or dried, it may be good still, but it is quite another thing. Cold storage may preserve the lusciousness for a while, but not for long. Especially is this true of the berry fruits, which have only a very thin protecting skin to defend them from the attack of bacteria and consequent decay.

In the canning process we have, as already stated, the only way of preserving these tender fruits in a condition at all approaching that when they were picked; so that we are at least reminded of what they were when fresh and of the pleasant summer days when we picked them, as they come upon our tables in the midst of winter. And this is a perfectly wholesome way of preserving fruit, when honestly done, as well as an entirely successful way, so far as keeping the fruit in an eatable condition for an indefinite length of time is concerned. But there are temptations not to do it honestly which are sometimes yielded to, and the product so obtained cannot receive unstinted praise, and may sometimes even deserve severe condemnation.

The complete success of canning fruit as to the mere matter of preserving it from any further alteration, which would mean moulding and decay, requires that the contents of the can or glass jar shall be heated throughout to a temperature at least nearly as high as that of boiling water; to do this takes time and care. If a little salicylic acid is added to the contents of the can it will so far assist the action of heat in killing all germs, that the heating need not be quite so thorough; and we find mention made in the horticultural journals of the possible usefulness of such an addition. But its use is not honest. The addition of salicylic acid to wine has been prohibited, as well as of all other preservatives, in European countries; because, while small quantities added may do no harm, there is no guarantee that if any at all is allowed it may not be used to excess. It is not harmless when taken into the system. Fruit properly canned without it will keep perfectly; fruit improperly canned, or poor fruit canned in any way, may keep with its aid and not without; and the more careless and slovenly the selection and preparation of the fruit, and the heating and sealing of it, the more freely must the preservative be added in order that it shall not spoil. Salicylic acid is widely used in this country (America) in the canning of vegetables and of Tomatoes; probably it is also used in the canning of fruits.—G. C. CALDWELL (*Western New York Horticultural Society*).

(To be concluded.)



GREEN CHRYSANTHEMUMS.

THE allusion which I made on page 412 to some new green Chrysanthemums being offered for sale this spring by a Japanese firm of nurserymen, has brought me a letter from Mr. W. Wells of Earlswood Nurseries, enclosing a small bloom of a variety which he has named Ethel Amsden. Although it is practically impossible at this season of the year to say what the possibilities are of this sport retaining its colour when grown in the ordinary way for blooms in the autumn, the colour of the example before me is so pure and so decidedly green that it may be looked upon as a decidedly promising novelty. Compared with the Japanese pictures Ethel Amsden is much more pleasing to the eye, and if growers can keep it from turning off to a greenish white when cultivated in the ordinary way, for Chrysanthemums produced in this country in May can hardly be so called, there will no doubt be found many admirers of such a novelty, especially as it comes from so valuable a parent.

In my researches to ascertain the truth of the story concerning a blue Chrysanthemum, which were duly recorded in the "Chrysanthemum Annual" for 1889, I frequently found depicted on Japanese Ceramic ware specimens of green Chrysanthemums, mostly of a ragged long-petalled Japanese type, and not having seen or otherwise heard of the existence of such a colour, came very naturally to the conclusion that green Chrysanthemums were as mythical as blue ones. It was regarded at that time as simply a vagary of the Japanese potter to give artistic variation to his ware, and not as the work of one who faithfully copied from nature. And this seemed quite justifiable at the time, because of the stereotyped outline of many of the examples represented on the Japanese pots and vases which I examined.

Subsequently, however, evidence was forthcoming which cause me to modify my opinion so far as green Chrysanthemums were concerned. In the Transactions of the Japanese Horticultural Society a few years ago there appeared a coloured illustration of a deep green Japanese variety of our popular flower, and the Editor of the "Moniteur d'Horticulture" of Paris reproduced it, and gave a translation of the article which accompanied the original illustration. As there appears to be some signs of this new class of Chrysanthemums becoming more widely known, and of which Florence Davis was probably the forerunner, a condensed translation of the account of the origin of the first known green variety may be interesting. It is as follows:—

The plant grows to the height of a little over 3 feet, and the blooms, which are of a dark green colour, are from 8 to 10 inches in circumference. Mr. Ogino, who exhibited it at a meeting of the Japanese Horticultural Society, where it was unquestionably regarded as a very remarkable variety, first saw it about twenty years previously in the collection of an amateur—Mr. Tamura of Saku, in the province of Shinano—who called it by the name of "Hekiundai." He then procured a plant of it, but unfortunately failed to keep it alive. Having occasion some time afterwards to speak about it to one of the principal Chrysanthemum growers in Japan—Mr. Midsumoto—the latter doubted the existence of such a rarity, and said it could not be a real Chrysanthemum, but one of another species. To make sure Mr. Ogino tried to obtain another example, but the owner was then dead, and the plant lost sight of. However, after numerous searches, Mr. Ogino succeeded in 1889 in finding another grower in the same province—a Mr. Katsuragawa—who had propagated the green Chrysanthemum, and from him a plant was obtained and exhibited as previously mentioned.

Such is the oriental history of the first known green Chrysanthemum, and it now remains for western florists to say whether they are to occupy as prominent a position as many of the other coloured varieties from the far East have done on our show boards and in our collections.—C. H. P.

THE WEATHER—INSECTS ON FRUIT TREES.

THE past month has again fully established its character with us for the changeable weather it usually brings, varying from very bright summer-like days to snowstorms and hard frosts. On the afternoon of the 20th some snow fell, and both the mornings of the 21st and 22nd were frosts of an unusual nature for the time of year. As much as 8° of frost was registered on both mornings, doing destructive work with early Potatoes. The fruit crop is not much injured, owing to being well protected by foliage. Rain, snow and hail fell on sixteen days during past month.—E. WALLIS, *The Gardens, Hamels Park, Buntingford.*

MAY has been a very fickle month, and will long be remembered for the wintry weather which occurred from the 19th to the 24th. On the mornings of the 20th and 21st we had of frost 4.4° and 4.7°. The first night was dry, but on the evening of the 20th there fell between rain and hail 0.104 inch. With the frost coming immediately after vegetation was covered in the morning with a sheet of ice. Total rainfall for the month, 2.544 inches, which fell on twenty days. Greatest fall any day,

0.334 inch on the 14th. Nights below 32°, six. Mean maximum, 56.9° (7° below May, 1893); mean minimum, 38.4° (5.5° below May, 1893). Highest maxima, 72.3° on the 24th; lowest maxima, 50.0° on the 16th. Highest minima, 45.7° on the 15th; lowest minima, 27.3° on the 21st.—G. M., *Stirling.*

MAY was very changeable, with snow on 20th, severe frost on 21st and 22nd, and a heavy thunderstorm on 30th. Wind was in a northerly direction eighteen days; total rainfall, 2.70 inches, which fell on twenty days, the greatest daily fall being 0.67 inch on 30th. Temperature, highest in shade, 65° on 25th; lowest, 29° on 21st; mean daily maximum, 57.16°; mean daily minimum, 40.19°. Mean temperature of the month, 48.67°; lowest on grass, 23° on 21st and 22nd; mean earth temperature at 3 feet deep, 49.09°; highest in sun, 129° on 8th, 14th, 22nd, and 25th. Total sunshine, 154 hours 14 minutes. We are now having a quantity of rain, which was much needed. The frost on 21st and 22nd severely damaged Gooseberries, Strawberries, and early Potatoes; fortunately the wall fruit escaped—we have an extraordinary crop—and the bedding plants were safe under glass.—W. H. DIVERS, *Belvoir Castle Gardens, Grantham.*

THE mean temperature of May I find to be the lowest for the last twenty years, it being recorded here from thermometers in a Louvre box 4½ feet above ground, was 46.3°, 3.4° below the average of the last twenty years, which is 49.7°. The average minimum or night thermometer was 37.9°; but in 1879 it was a little lower, being 37.6°, which is the lowest of the series. The average of maximum or day was 54.8°, which is a degree higher than 1891 with 53.8°, and 1877 with 54.2°; but the mean temperatures of the month stand—1894, 46.3°; 1891, 46.4°; 1877, 46.6°. The rainfall recorded here for May, 1894, was 3.40 inches, which is the largest amount in May for the last twenty years. The next heaviest of the series of years was 1885 with 3.36 inches, and 1886 with 3.29 inches. I may mention that the mean temperatures of April and May, 1894, was identical, being 46.3°, for each month; April day temperature 53.8°, night 38.8°; May day temperature 54.8°, night 37.9°, or May ½° higher.—J. MACHAR, *Corana, Broughty Ferry, N.B.*

JUST as I had opened the *Journal of Horticulture* on the 31st ult., and was looking over the various reports of the damage done by the late frosts, we were visited by a very severe thunderstorm, accompanied with hailstones varying in size from a horse bean to a marble. The down-pour continued for about half an hour, the ground being white with the hailstones, which took some time to melt, and on the roofs of the forcing houses they lay in ridges in a half-thawed state for three or four hours in the bright sunshine after the storm had abated. Fortunately, no glass was broken, but the tender foliage of fruit and other trees were a good deal cut, the leaves lay thickly strewn under the Peach trees. On the walls Chrysanthemums and other plants were damaged, and vegetables have suffered more or less after the storm. The temperature was very much colder, and the air had a very chilling effect. About a mile from here three cows that were sheltering from the storm under a tree were killed by the lightning. When the hailstones were melted we registered 0.43 inch of water.—G. R. ALLIS, *Old Warden Park, Biggleswade.*

As no report appears to have reached you from the Vale of Evesham, regarding the recent severe weather, a few remarks may be of interest to some of your readers in market gardening and fruit-growing districts. No previous spring frosts ever wrought such destruction as those of the 20th and 21st May. Runner Beans and Potatoes were cut down, Marrows were killed under hand-lights, and almost everything in a growing state was more or less damaged. The worst blow was to the fruit. On all the flat land the Plums and Currants were killed, and the Gooseberries, of which there was promise of an abundant crop, were quite three parts taken, but those under trees did not suffer so severely as those in the open. In a few very high parts of the district no damage was done. I noticed on the same piece of land the variety Keepsake are almost all killed, while Whinham's Industry is carrying a heavy crop, thus proving the hardness of the latter variety. Strawberries are also seriously injured, some crops ruined. Early Peas are crippled, and the main crop, Telegraph and Leicester Defiance, will be found very light at picking time. Apples and Pears are not grown much in the market gardens, but I have noticed some dwarf trees of Lord Suffield, Lord Grosvenor, and Stirling Castle, and the Apples appear stunted, so I am afraid they will fall.

I do not know if the trees in other localities are damaged like they are here. The leaves (especially of the Pershore Plum) are all singed as though a fire had been lighted under them, and it also seems to have penetrated to the pith. Those branches carrying the most fruit appear to have suffered worst. Growers are at a loss to know what to do with the trees for the best.—MARKET GROWER.

THE severe frost on the night of the 20th of May gave us another instance of the great capriciousness of the English climate. In an article published in the *Journal of Horticulture* a few weeks ago the present spring was termed by a leading authority as being an ideal one, and doubtless up to that above date he was right. We have passed through a winter of almost unparalleled mildness, vegetation generally suffering little or none. The weather of the early spring left nothing to be desired, and horticulturists had every reason to expect good and

early returns for their labour. The farmer looked on his thickly bloomed orchards and promising crops with an air of complete satisfaction, the gardener surveyed the different departments of horticulture under his charge, and felt for once at peace with Nature, while the market grower "chuckled" to himself as he thought of the large amount of produce he would be able to put so early in the market.

On the night afore mentioned, however, "Jack Frost" spread his devastating arm over the country, and vegetation next day was pitiable to behold. In the forest the early growth of the giant Oak hung limp and lifeless, while beneath the branches the young fronds of the springing Ferns presented a forlorn appearance, withered and bending as if bowing to the will of a superior power. On the farm and in the garden the appearance was the same, and the feelings of horticulturists can be better imagined than described. The farmer looked at the blackened tips of his fruit trees and sighed as he thought of the item in his rent account, which he had anticipated his fruit would make; the gardener again surveyed his charge, which had hitherto looked so promising, with an air of vexation and disappointment. Perhaps the most to be pitied, however, is the market gardener, whose livelihood depends solely on his productions. He looks at his large patches of early Potatoes, which he had estimated would bring him in a substantial sum. They are all black and withered, and comparatively useless. His Beans and many other crops are the same; while in some districts huge fields of early Strawberries suffered severely, and the crops will be reduced to a minimum. No one knows so well as himself what this will mean. All this adds another link to the chain of disappointments with which horticulturists have to contend, and gives us to understand that while forecasting the results of our efforts we must always make allowance for the caprices of an ever-changing climate.—G. H., *Alton Towers*.

WE had 2° of frost on the mornings of May 21st and 22nd, with a north-east wind, and rather more damage was done on the morning of 22nd, as the wind was stronger; but as most things were dry at the time the chief damage done was to blacken the leaves of the Potatoes without destroying the stems. I do not think the fruit crops in our locality are injured by frost, but I regret to say that we have a bad visitation of insect pests on the Apple, Plum, and Cherry trees, in spite of repeated dressings of quassia and softsoap, assisted by an occasional hailstorm and rain showers. I hope that my experience with regard to insects is not general; if so, it will spoil the promise of spring.—R. MAHER, *Yattendon Court, Newbury*.

WITH our thermometer hanging on the open espalier nearly 4 feet from the ground and about 100 yards from the river Wear, the frost on Monday, 21st ult., was 12°; 22nd, 12°; 23rd, 12½°; 24th, 7°; 25th, 10½°; thus making a total of 54° for the consecutive five nights, and as even the grass is seriously damaged—in fact, I never saw anything like it—one may judge what are our fruit prospects hereabouts. The week previous was cold—bitterly cold—and what we may have left I think will be largely attributable to this cold, as all vegetation was thoroughly hardened, and which perhaps reduced the damage to what might have been expected from a third less frost with softer conditions. I may say that I notice quite a scourge of green fly, and strange to say the insects do not seem to have been much affected.—JOSEPH WITHERSPOON, *Red Rose Vineries, Chester-le-Street, Durham*.

THE VALERIAN (CENTRANTHUS RUBER).

I AM not surprised that your correspondent, "E. D. S." (page 429), should have been attracted by the sight of a large mass of this beautiful plant in bloom. His note reminds me that some years ago I was really startled on coming suddenly to an old quarry in which the red Valerian and a blue *Anchusa* (probably *italica*) had taken possession of the place. Being near to the entrance gate to a gentleman's estate, and in full view of the drive, very probably the plants had been introduced by someone. Be that as it may, I was led to think what splendid effects could be produced in many a similar place, and whenever I see an old rugged quarry that seems of no use to anybody, I feel I would like to amuse myself with it.

"E. D. S." will be pleased to know there is a pure white variety of this Valerian. I first saw it many years ago growing on the top of a wall at Wrington, Somerset, but I was not able to collect it. Since then I have met with it elsewhere, and introduced it with a very deep red variety into the garden here to cover a dry bank, and they do it well. The red one is, moreover, becoming rather troublesome, as the seeds are furnished with a pappus-like appendage, by means of which they are carried by the wind to places where not wanted. The white variety with me does not spread so much, nor have I yet observed any seedlings of a paler colour than the original dark red, which, by the way, is many shades deeper than any I have seen growing wild. I have frequently met with large breadths on railway embankments, but have never observed any great difference in shade of colour. If your correspondent cares to have one or both of the varieties above mentioned I will send them with pleasure on receipt of post card with address.

While on this subject of native flowers I would like to mention three other plants of great interest and beauty—viz., *Erinus alpinus*, *Dianthus cæsius* (Cheddar Pink), and *Reseda alba*. The first named is not a native though it is included in some British Floras as a naturalised plant.

This and the *Dianthus* are growing in fair numbers on old walls near here. It would be difficult to imagine a prettier sight than a mass of this *Erinus* on an old wall. The *Reseda* I found growing in a semi-wild state, and was so charmed with the beautifully cut leaves and tall spikes of almost white flowers that I obtained seeds, and now grow it as a hardy annual, or rather it grows itself, for it comes up freely at the end of the summer, and any seedlings which happen to be in suitable places are allowed to remain. It is in full beauty at the present time.—T. S., *Henbury Hill*.

IN reply to "E. D. S." (page 429), I may state that the white variety of this Valerian occurs on some of the chalk cliffs at Northfleet near the Thames, also there is a clump of it in the cutting near the Rosherville station of the L.C.D.R., and one in the Gravesend Cemetery. Probably it ought to be detected, too, along the South-Eastern line, but I have not observed it there. I may add that the plant also grows sometimes on walls and church towers. Most botanists consider it is not a native, the tradition being that the monks brought it from the South of Europe, cultivating it, perhaps, for two purposes, and by means of their gardens it became dispersed over many districts. Even yet, Spaniards and Italians use the leaves with their sea-green bloom for salads and stews, and the old monks may have admired their peculiar flavour. The root was presumed to have the same cordial antispasmodic qualities possessed by the great Valerian.—J. R. S. C.

COTTAGE FARM, SULHAMPSTEAD.

A VISIT to this thoroughly rural locality and Mr. Robert Fenn's small freshold, as above named, always repays. For fully half a century Mr. Fenn has been working in the interest of gardening and sanitary science in relation to households, and the interest thus evidenced is still to be seen actively operating at Sulhampstead. The great charm of this place is that, whilst nearly all the land about the district is in the hands of one or two mammoth holders, Mr. Fenn's some 13 acres is his own, and therefore he is at liberty to do as he likes with it. There he has planted fruit trees, especially Apples and Plums, in great abundance both in garden and orchard; and not content with that he has planted both largely on a headland in one of his meadows, where it would have been difficult otherwise to cultivate the soil; hence there is good effort made to utilise every corner. A most interesting feature, too, of Sulhampstead are the memorial trees, representative of dead and living friends, who thus live in admirable remembrance.

When at Woodstock no man made for himself a wider reputation in connection with Potatoes than did our old friend. Not a few of his varieties found their way into commerce, and some now are still of the very best. Whilst other persons worked so much for abundance, Mr. Fenn worked for quality. His idea was that by judicious breeding the Potato would be made something more than a mere vegetable; it should be really a valuable food. Still, even as an article of food the tuber should not be judged so much by size or bulk as by its inherent flesh-forming qualities; and when he tells us that he has fatted pigs alone on seedling Potatoes, although the illustration may not be of the most refined, yet is it effective as showing that whilst many sorts having large tubers are little else than water, others may have in them starch or gluten in considerable abundance. Seedling Potatoes are still raised at Sulhampstead, though now fewer, and the latest product is a cross between one of the best English raised sorts and *Solanum Maglia*, which may in time give something of exceptional interest. After all we are content to remark, and the proof may always be found if anyone will visit Sulhampstead, and partake of the Potato food so liberally furnished, on the excellence of the product.

Whilst a large area of what was formerly arable land has for the time been laid down to grass, still a long strip in one of the fields has been trenched and worked well, then sown and planted with various vegetable crops, and here we have at once furnished another valuable lesson, as the ground thus cultivated is fully three times more productive than is the land close by hitherto ploughed only. Much as many who farm land grudge the initial expense incidental to spade or fork labour, yet would they but risk capital in their ground in that way they would find the benefit, not only in the first but in several successive seasons. Practically there can be no cultivation worthy of the name that is not the product of spade or manual labour.

The utilisation literally of everything, no matter what, is the order of the day at the Cottage Farm. Earth closets utilise everything otherwise an intolerable evil; so also do underground tubs or tanks for the reception of every description of animal drainage. That is freely utilised by irrigation on grass, about trees, and is also carted where needed for the benefit of all sorts of crops. Then all descriptions of garden and field refuse, such as cannot be consumed by cows and pigs, is burnt, being mixed with clay, the which, half baked or charred, becomes marl, and thus helps to fertilise the soil.

On the cottage wall, north side, is a fine Golden Drop Pear tree. This is not close pruned or nailed, but the shoots project out some 15 to 18 inches from the wall. The result is a grand crop of fruit, and very little trouble indeed with aphids. On the warmer side of the cottage is growing a rather loose *Esperione* Vine; the lower branches have been brought inside and along the back of a small cool greenhouse. Even with such trivial protection the inner growth is far more robust, and a long way earlier than is the external growth, and the bunch promise is a wonderful one. Here is demonstrated in a small way the

great value of some trifling protection to an ordinary hardy Vine. The utilisation of fruit products in the manufacture of liquors has very long been one of Mr. Fenn's characteristics. There is in the barn a screen through which is passed all the smaller and fallen Apples and Pears for conversion into cider and perry. The Esperione Grapes make what passes for sherry and port. The Gooseberries become converted into what also may be regarded as English champagne, and Mr. Fenn thinks much more wholesome than is the imported liquid for which people like to pay 7s. 6d. per bottle. These are, however, but some of the things done at Sulhampstead which serve to show that the small farmer here is something more than an ordinary man, and large farmers and many gardeners cannot visit Mr. Fenn without coming away wiser in many ways.—A. D.

STATICE PROFUSA.

It is much to be regretted that the cultivation of this *Statice* is so generally neglected, for it would prove an inestimable acquisition to those gardeners who have to maintain an unbroken supply of plants for late summer and autumn decoration. In groups, as individual specimens, or when used in conjunction with other plants it is always an object of admiration, yet does not seem to win general favour with cultivators. It cannot be said that it is at all difficult to grow, excepting perhaps some slight trouble in propagating, which can be easily overcome if the right method is adopted. The flowers, too, are of a striking colour—far too scarce amongst our plants, and to them might fittingly be applied the term "everlasting," for they will remain in good condition on the plants for quite three months.

As the rooting of the cuttings is generally attended with some slight difficulties, it will be as well to commence with this operation. Secure shoots of about 4 inches in length, well provided with leaves to the base, and the stronger these are the greater will be the progress made. Remove two or three of the lower leaves so that about an inch of the stem will be bare, which must be cut square across directly below a joint. Prepare small pots by draining perfectly, and filling with a compost of peat, sand, and charcoal in equal proportions, with a small quantity of sand placed on the centre of each, to insure the cutting resting on and being surrounded by this material. Insert the cuttings singly, and do not bury the bases of the lower leaves, as it is very important that these should not on any account be allowed to damp, for if the cuttings once lose the services of these their chances of rooting are indeed problematical. Cuttings taken from plants in active growth almost invariably give the best results.

After insertion see that all are made firm and thoroughly watered, then place thinly in hand-lights, which should be set upon a cool bottom, either of shingle or coal ashes, in a house where a temperature of 60° to 65° is maintained. Now it is that the chief difficulty generally presents itself, and to overcome which it must be the cultivator's endeavour to maintain such a degree of humidity within the hand-lights for the next fourteen or sixteen days that the cuttings are neither allowed to flag through a too dry atmosphere nor damp from an opposite cause. If these conditions are strictly observed roots may be looked for after about the twelfth day from date of insertion. Owing to a peculiarity of this plant in sending its roots at once into the drainage and through the hole of the pot it is unnecessary to turn the cutting out to ascertain whether it is rooted. On the first appearance of roots remove from the case but still shield from bright sun until they become used to the change.

When the cuttings are well rooted shift into a larger size and grow in the same temperature, removing a few leaves at intervals so as to prevent crowding. The compost for this and the remaining shifts should consist of good fibrous peat and loam, two parts of the former to one of the latter, a little sun-dried cow manure crushed through a half-inch sieve, and enough coarse sand to keep the whole open. Continue to repot as the plants need it until 8-inch pots are reached, when they should be removed to cooler quarters to mature and solidify the growth made. Some growers flower the young plants the first year, but this is scarcely to be advised, as all the strength should be stored up for a grand effort the following season. For winter quarters any house where a temperature of 45° to 50° is maintained, and which possesses a cool bottom whereon to set the plants, will answer admirably. Water at that period and until new growth commences must be very sparingly given, as the extremely fine roots are very susceptible to injury from too much moisture.

Early in January two or three plants should be placed in a gentle heat for the production of cuttings, allowing the remainder to continue in cool quarters until the beginning of March, when growth will to a certain extent have commenced. This is the best time to repot those plants that require it, and top-dress others. By annual top-dressings plants may be kept in good condition for years in the same pots. For potting use the same compost as previously advised, but for top-dressing much richer material is needed. The following will answer admirably:—Fibrous loam and peat in equal proportion, and add some approved chemical manure. Remove about an inch of the old soil, and when adding the new see that it is pressed quite firmly—a remark equally applicable to the potting. Although this plant will grow very satisfactorily in a cool house, the finest foliage and flowers are always the result of a medium temperature and an atmosphere at all times slightly charged with moisture. One drawback this latter treatment has—viz., the trouble given to keep green fly in check, but this may easily be overcome by lightly fumigating at intervals. Pinch out all

flowers until within six or eight weeks of the time they are required to be in bloom, give occasional dressings of chemical manure, and prevent the foliage becoming crowded by removing surplus shoots and leaves whenever it appears to be needed. Before removing for decorative purposes, give each cluster of bloom the support of a short stake to keep it in position and prevent accident.—SASSENACH.

MR. G. MOUNT'S NURSERY, CANTERBURY.

OF the various places with which my early days were connected there is none for which I have retained so warm an affection as for the old city of Canterbury. It is true that some of its features are altered, which must of necessity be the case in these days; and when a place has had two railways brought into connection with it, changes must inevitably ensue. I cannot but think it somewhat remarkable that this old, and as it then was, sleepy city should have been the first to introduce the iron road, which it did in the line connecting it with Whitstable, a distance of about six miles. There was no locomotive, but the carriages were drawn by a rope to the top of the hill—about half way—and then allowed to run down the other side. Although some-called improvements have taken place within the city itself, yet a large portion of it remains as it used to be. Its quaint and narrow streets, its old-fashioned houses, its solid almshouses, its old churches, and above all its grand Cathedral still remain much as they were; and amongst those things which have not been swept away or given over to the destructive tools of the "jerry" builder is the old exotic nursery, which once belonged to Mr. Alderman Masters, and which after his death passed through various hands until it fell into those of Mr. George Mount, by whose energy and intelligence the place has been greatly altered and modernised. The quaint little shop facing St. Peter's Street, and the old dwelling house still remain much as they were.

It is refreshing in these days, when one is hearing so much of depression, and when we become unfortunately personally acquainted with it, to hear one who tells us such tales, but who speaks cheerily of what he has done and what he hopes to do. In the visit which I recently paid to him I was forcibly struck with the energy with which he had carried out his work and the success that has attended his efforts. It is true that the old Exotic Nursery has been greatly altered, and one cannot help regretting (although I know it was necessary) the removal of the old round house which stood in the centre of the nursery, and where many a strange and curious botanical curiosity had been grown, for Mr. Masters was one of those horticulturists with whom the commercial value of a plant was not the first consideration; his scientific knowledge of plants, and his zeal in endeavouring to overcome the difficulties attending the cultivation of many of them were not conducive to such commercial success as is reaped by those who go in for the cultivation of two or three kinds of plants which they grow extensively. When I call to mind the many pleasant chats I have had with its accomplished owner in that same round house, I could not but regret the necessity of its removal; but like many other structures it had fallen into decay, and its original construction was not of a kind that would ensure its continuance.

Mr. George Mount, who, after the nursery had passed through many vicissitudes, entered upon its occupation some few years ago, had been long known to the Rose world as a thoroughly good, sound, and practical rosarian. Long ago he was an amateur growing about 300 Roses in a small garden in Harbledown, close to Canterbury. Here he achieved such success and exhibited so well that he was encouraged to attempt longer flights, but feeling that he could not accomplish this as an amateur he took some ground at St. Dunstan's, close to the old city, and erected some glass structures for the purpose of growing his favourite flower. After this the opportunity was offered him of taking the Exotic Nursery, of which I have already spoken, and which is really within the old city walls, also a small nursery at Vauxhall, about two miles from the city, and is a splendid soil for fruit trees. This last year he opened a nursery at Folkestone, and it is cheering to find that amidst the many complaints of depression here is one tradesman, at any rate, that takes a hopeful view of things, and believes in the ultimate success of his undertakings.

Mr. Mount's object in Rose growing is not mainly the growing of plants for sale but of cut flowers for decoration. He finds a ready demand for his blooms all through the spring months. To supply this Mr. Mount has added house after house, and thousands—nay, tens of thousands of both Tea and Hybrid Perpetuals. In the St. Dunstan's Nursery there are ten low span-roofed houses at present filled with grand Tea and Hybrid Perpetual Roses in vigorous health, and with a perfect forest of buds in various stages of development; while on the roof may be seen the *Maréchal Niel* with upwards of 3000 flower buds on it, William Allen Richardson, and other strong growing kinds gratify the eyes. Of course, the Roses which are grown here are confined to a few of the best kinds for cutting purposes. Thus amongst Teas *Anna Ollivier*, *Catherine Mermet*, *The Bride*, and *Niphetos* are extensively cultivated, although his growth of *Niphetos* is somewhat diminished, as there are so many persons about London who grow it almost exclusively. *Cleopatra*, the last of Mr. Henry Bennett's seedlings, is in much favour with Mr. Mount, and will be increased from year to year.

Amongst Hybrid Perpetuals *Général Jacqueminot*, *Mrs. John Laing*, *La France*, and *Baroness Rothschild*, and *Ulrich Brunner*, are grown in large numbers. I was rather surprised at the latter flower being so much grown, as I thought it would be too large for ordinary decoration.

"And so it is," was Mr. Mount's reply, "but it comes in well when bold decorative effects are required." These houses are not devoted exclusively to Roses; those which have done their work are turned out, and are succeeded by Tomatoes and Chrysanthemums. There are also one or two houses full of the Maidenhair Fern, which is so largely used for bouquets and decorative purposes generally; but while this time of the year the interest will be mainly concentrated on the glass structures and their contents Mr. Mount has other plants out of doors equally worthy of attention. Roses are everywhere in evidence, and a border of Tea Roses 800 feet long and filled with the very choicest varieties in full vigour and health, give promise of an abundant bloom by-and-by, and of flowers which may probably place Mr. Mount in a high position among professional exhibitors.

Turning now away from St. Dunstan's Nursery, and passing through the old Westgate, we come to the quaint little house already alluded to, and on going into the garden behind it we find everywhere evidences of progress. As a complete proof of this I may state that during the past twelve months Mr. Mount has erected here a large three-span Palm house 40 by 40 feet, ostensibly to take the place of the old round house, also three houses, each 60 by 16 feet, beside span frames. None of these are unoccupied, but filled to their very utmost extent with Roses, Carnations, and other plants valuable for cut flowers. While the whole aspect of the garden has thus been altered, Mr. Mount has been wise enough to spare the old Mulberry trees, which bring one's memory back to very early days. Here, too, a large number of the Pinks Her Majesty and Mrs. Simpkins are grown for cutting. Roses out of doors do not, of course, fare so well here as they do in the more open situation of St. Dunstan's, but happily Canterbury is not a manufacturing city; its chimneys do not send forth such volumes of smoke as does many a smaller town in the North, and Roses can be grown out of doors even in St. Peter's.

The popular seaside resort of Folkestone has, like many other places of the same nature, been singularly deficient in means for gratifying the tastes of its visitors for flowers who flock to it in thousands during the summer and part of the winter months. Mr. Mount has, during the past year, endeavoured to supply this deficiency; he has opened a nursery near the Radnor Park Station, and has built a house 80 by 20 feet, which will be filled with such plants as I do not think the visitors of Folkestone have hitherto been accustomed to see. I quite sure too that this is only a beginning, and just as each year has seen St. Dunstan's and Exotic Nurseries increase in size and efficiency, so, I believe, we shall see the same thing done at Folkestone.

We are always interested in examining into the causes of anyone's success. Mr. Mount had no advantages to start with. He was a tradesman in a small way; but there are some points in his character which rarely fail to win success. He has indomitable energy and perseverance; he does not take up anything as a fad, carry it on for a little while, and then start something else, but pursues it until he has reached the goal which he desires to attain. Then he is a thoroughly straightforward man in all his dealings; his business is carried on on sound principles; he supplies good things, and when he has obtained a market never loses it. He has great advantage too in being a good mechanic; all the houses and frames are built at his own place and under his own superintendence, and while economy in their construction is aimed at, strength and durable are attained.

The city of Canterbury has many attractions, and probably during the season many Rose growers find their way thither. It has a small Rose Show which, however, seems to have more attractions for the visitors than for the citizens, and I am inclined to think that a visit to these nurseries will form no small part in the attraction the city may have to lovers of the garden. They will always be courteously received by the owner, who can tell them much of the changes he has been able to make in his surroundings.—D., Deal.

THE MIDLAND PANSY SOCIETY.

THE severe storms in Scotland and elsewhere, with frosts and sunless cold weather, told against Pansies, and the recent exhibition of this Society at Tamworth was not equal to that of last year. Still, Messrs. Irvine, Smellie, Campbell, and Bailey were all competitors in the open trade classes, and although a tendency to coarseness was perceptible throughout the Exhibition, these noted growers staged some fine blooms.

In the class for forty-eight Fancies, dissimilar, the prizes were awarded as follows—first, Mr. J. Smellie, Bushy, Glasgow; second, Mr. M. Campbell, Blantyre, N.B.; third, Mr. A. Irvine, Tighna-braich, N.B.

For twenty-four Fancies, dissimilar, the awards were—first, Mr. N. Bailey, Sunderland; second, Mr. Smellie; third, Mr. Campbell. For twelve Fancy Pansies, first, Mr. Smellie; second, Mr. Campbell; third, Mr. Irvine. For six blooms of any one variety, first, Mr. Campbell; second, Mr. Smellie; third, Mr. Bailey.

For twelve blooms of seedlings, first, Mr. Smellie; second, Mr. Irvine; and for twelve sprays of Violas, distinct, Mr. Smellie was again first.

In the local trade classes Messrs. Pope & Sons, nurserymen, Birmingham, were first for forty-eight blooms, twenty-four blooms, and six blooms of one variety, and second for twelve Fancy Pansies. Mr. Wm. Sydenham was first for twelve blooms and second in each of the others, the bad weather having seriously affected his flowers. Mr. W. H. Gabb, Small Heath, was a good third for twelve blooms.

There was a special class for amateurs residing within twelve miles

from Tamworth, and Mr. Robert Hannah, Atherstone, was first for twelve Fancies, second for six, first for four blooms of one variety, and second for six seedlings. Mr. W. B. Fowler, Freasley, Tamworth, was second for twelve, first for six, and Mr. R. Pemberton, the Rev. H. S. Watson, Water Orton, were the other prizewinners. Mr. Johnston, Hints Hall Gardens, Tamworth, scored well in the two classes for six sprays of Violas, and Mr. Gabb was first for twelve sprays of Violas.

Some classes were arranged for amateurs in the central Midland counties, and were well contested; and in the open amateur classes Mr. A. C. Christie, Shifnal, Salop, was first for twenty-four Fancies, and Mr. J. Egginton, Wolverhampton, second with very good stands, and the other classes were well filled.

For six sprays of Violas, distinct, Mr. A. J. Rowberry, South Woodford, Essex, was well first with superb blooms, and he also staged twenty-two sprays not for competition, very fine, and admirably arranged, to which a special silver medal was awarded.

Mr. Samuel McKee of Belfast gave a special prize of 10s. for a spray of three blooms of a seedling Viola, and this was won by Mr. J. Smellie with a charming variety George Lord, very pale primrose, of fine form and substance, and entirely rayless.

First-class certificates were awarded to the following seedling Fancy Pansies:—Constance Steel, Mrs. John Smellie, and William Crosbie, all exhibited by Mr. Smellie; David Douglas, exhibited by Mr. Campbell; Miss Morton and Miss Weaby, by Mr. A. Irvine; Queen of Beauties, by Mr. J. Bradley, Belfast; and Mr. Wm. Sydenham was awarded a first-class certificate for a collection of Fancy Pansies, not for competition.

Handsome prizes were given for floral decoration work in Pansies and Violas, Fern or other foliage allowed, and Messrs. Perkins & Sons, Coventry, won first prize for a bouquet, also a basket, and second for a spray, Messrs. Pope & Sons and Mr. Thewles being the other prizewinners. In the amateurs' classes Mr. Johnston, Hints Hall Gardens, was first for a bouquet, second for a basket, and second for a wreath.



HARDY FRUIT GARDEN.

Mulching Fruit Trees.—The ground immediately under the spread of fruit trees and bushes ought now to be lightly covered with about an inch thickness of half-decayed manure, which will act as a conservator of the moisture already in the ground should the summer prove dry and hot. If, on the contrary, a wet season prevails, the manurial elements in the mulching will be carried down to the roots and assist in feeding the crop or stimulating new growth, which may be greatly needed in some trees, while in others too much wood growth is not to be encouraged. Young and vigorous trees not yet in bearing should be mulched with poorer material. Short, flaky manure or grass mowings are admirably adapted for the purpose. They contain no nutriment, but prevent the too rapid evaporation of moisture from the soil. Mulching material must never be heaped thickly in a restricted circle round the boles of fruit trees, but spread equally over the area occupied by the roots, the extent of the branches being the best guide. The advantage gained by mulching is not confined to the retention of moisture in the soil, though that is the main object. The roots are prevented descending deeply in search of moisture and food. Hence they ramify near the surface in a warm, aerated, moist medium, and assume a fibrous character. This promotes fruitfulness as well as encouraging a due amount of new growth necessary for proper extension.

Watering Fruit Trees.—Wall trees often suffer seriously from the dry condition of the soil immediately close to the walls. The result is seen in the lowering of vitality in the trees and the increase of insects, together with deep rooting, followed by strong unfruitful growth owing to the roots taking up crude support from lower levels, which they have reached in search of moisture. In the latter case watering to the depth of 2 feet will do good, provided some fibrous roots are present in it and fruit is developing on the trees. Restriction of the strong roots should, however, be carried out in the autumn. The trees which need the most water are those carrying a good crop. The proper development of the fruit depends upon the healthy condition of the foliage. The leaves abstract food from the roots, which gather it from the soil when that is moist and capable of supplying it, and in addition, to do their work most successfully, the leaves must have abundance of light and air. Trees in fruitful condition have a large number of fibrous roots, and if these suffer through want of moisture the whole tree is imperilled. Therefore, along with due attention to the regulation of branches and shoots, see that the roots are well supplied with water, then give a mulching of manure. These details of culture are of the greatest importance wherever trees are growing in a naturally dry position or in a light porous soil, especially near walls and fences where the rain does not always easily reach the soil.

Syringing Wall Trees.—As a refresher to fruit trees towards the close of a hot, parching day the syringe or the garden engine is invaluable. Healthy growth is promoted, insects are disturbed and dispersed, and that troublesome little pest the red spider is prevented obtaining a lodgment. When the foliage can be kept clean in early summer it

becomes proof against serious attacks, as the tissues of the leaves gain strength; but even then long-continued dryness in the atmosphere and at the roots invites attacks.

Remedies for Cleansing Trees of Insects.—When the frequent use of clear water fails in keeping trees clean recourse must be had to some of the numerous insecticides to aid in the quick destruction of pests which infest them. A useful insecticide for destroying red spider on the under sides of leaves and aphides clustered on the points of Cherry and Plum trees may be made as follows:—Dissolve 3 ozs. of softsoap in a gallon of hot water, and stir in a handful of flowers of sulphur mixed into a paste with a little water. Dustings of tobacco powder by the aid of an indiarubber distributor is a ready means of killing aphides difficult to destroy effectively in other ways. Wash off the powder the next day with clear or soapy water. The softsoap and sulphur solution is good for exterminating mildew; so also is sulphide of potassium, at the rate of half an ounce mixed in a gallon of water, spraying the solutions upon the affected parts with a knapsack sprayer or a syringe. Maggots that roll themselves up in the leaves must be picked out. Gooseberry trees infested with caterpillars ought to have as many shaken off as possible, and quickly destroyed with a dusting of lime and soot; then syringe the trees with softsoap solution, which is better than using poisonous compounds where fruit is hanging and wanted for immediate use.

Outdoor Vines.—Vines growing on walls and trellises will need attention in regulating the new growth and securing it in position. When the bunches of fruit show thin out to one on a lateral, selecting the stronger. Stop the shoots to one or two joints beyond the fruit. Where there is room to allow new wood to extend encourage it to do so, especially from the base. A frequent renewal of wood produces finer crops than do old spurs on thick branches. In the endeavour to provide such, however, avoid overcrowding, or the new wood cannot become properly ripened. Syringe the foliage occasionally in warm weather to prevent attacks of red spider and to remove dust, nourishing the roots as required with water, affording liquid manure in addition when a good crop of fruit commences swelling.

FRUIT FORCING.

Peaches and Nectarines.—*Early Houses.*—When trees of the very early varieties, such as Alexander, Waterloo, and Early Louise Peaches, Rivers' Early and Lord Napier Nectarines have been cleared of the fruits, the shoots on which they were borne, if not required for the extension of the trees, should be cut away to allow light and air free access to the foliage. Syringe forcibly to cleanse the leaves of red spider, and if this and scale continue troublesome, the prompt application of an insecticide will be necessary to eradicate the pests. It is highly important that the foliage be kept healthy, and to prevent over-maturity or premature ripening of the wood it is necessary to keep the atmosphere of the house cool by ventilating to the fullest extent after the fruit is gathered, excepting when the weather be unusually cold and the wood somewhat sappy. Keep the borders moist, and in showery weather remove the roof lights. Keep gross laterals stopped, but avoid giving a check by a great reduction of foliage at one time, as this has a tendency to hasten the ripening of the growth, and when such is the case the trees will be swelling the buds or casting them through over-development when they should be resting.

Trees of Hale's Early, A Bec, Rivers' Early York, Early Alfred, Dr. Hogg, Dymond, Stirling Castle, Royal George, and Grosse Mignonne Peaches, with Elruge or Stanwick Elruge and Goldoni Nectarines, in the same house or in a house to themselves, which is much the best, will be ripening their fruits, and must not be syringed unless the trees become infested with red spider. When water hangs on the fruits for any length of time after they commence ripening the skin is liable to crack and the edges of the fissures are soon attacked by mould, which imparts a musty flavour. The trees must not be allowed to suffer by want of water at the roots; but any excess of moisture at this stage has a tendency to cause splitting at the stone.

Houses Started Early in January.—Where the trees have been forced for several years consecutively they will have the fruit in the condition described in the preceding paragraph, but where they are forced for the first time, or have been forwarded gently, the finest fruits will now be ripening. The leaves should be turned aside, and the fruit raised on laths placed across the trellis and secured with its apex to the light. This, however, ought to have been effected some time ago, and the fruit will, where that has been done, now have attained a good colour. If the weather prove dull and wet gentle fire heat will be necessary to secure a circulation of air constantly, the temperature being maintained at 60° to 65° artificially at night, and 5° to 10° more by day. Cease syringing as soon as the fruit begins to ripen or soften, and take care to have the foliage free from red spider before the syringing ceases, as the pest otherwise will increase so rapidly whilst the fruit is ripening as to seriously jeopardise future crops. See that there is no deficiency of moisture in the border, and, if necessary, give a thorough supply of water, mulching with about a couple of inches thickness of light, rather lumpy material, such as spent Mushroom-bed manure or partially decayed stable litter.

Succession Houses.—Hurrying the trees during the stoning process is sometimes fatal to the fruit, therefore allow time for this most exhausting essential. Allow a free circulation of air, ventilating early in the morning, and close soon in the afternoon with an abundance of atmospheric moisture, so as to raise the heat to 80° or 85°, and ventilate a little afterwards for the night, the temperature being allowed to fall to between 60° and 65°. This must only be practised after the stoning

is completed, as a close atmosphere has a tendency to promote growth and is not favourable to that process, therefore avoid undue excitement when the trees are in that condition. When the fruits have stoned remove all surplus fruits, and turn the others with their apexes to the light to insure colour and even ripening from the apex. Allow a rather free extension of the laterals as an encouragement of root action, but be careful not to crowd the principal foliage, and keep insects in check by syringing twice a day. Give thorough supplies of water through a surface mulching, not more than 2 inches thick, of lumpy material, and supply weakly trees with tepid liquid manure. Vigorous trees will not need more than a surface mulching, as high feeding will only cause grossness, and must be studiously avoided.

Late Houses.—Train and tie in the shoots that are to carry next year's crop, allowing them to extend to a length of 15 inches or more if there be space, or stop them at about that size and pinch laterals to one leaf, being careful to avoid overcrowding. Young shoots required for extension or furnishing the trees should be allowed to extend as far as space admits, and pinch all side shoots on last year's extensions that are not wanted for next year's fruiting or furnishing the trees, so as to form spurs and secure an equal distribution of the sap. In thinning the fruit leave a few more than will be required for the crop. A Peach to every square foot of trellis covered by the trees is ample to secure the finest specimen of the large fruited varieties. The medium-sized and Nectarines may be left a little closer. Keep the leaves clean by syringing twice a day, and always sufficiently early to allow the foliage to become dry before night. If insects cannot be kept under by those means promptly apply an insecticide. Mulch the borders with a little short manure, or if the trees are young and vigorous lighter and less rich material will be more suitable. Water thoroughly whenever necessary, always giving sufficient at a time to reach the drainage. Ventilate early and increase the ventilation with the sun heat, closing soon in the afternoon if the fruit is required early. If the fruit is wanted late, however, keep the atmosphere as cool as possible by free ventilation day and night.

Recently Planted or Young Trees.—These should be properly disbudded, leaving the main branches or shoots for forming them 15 to 18 inches asunder and the bearing wood at a similar distance on the last and previous year's wood, training the extensions their full length and pinching the side shoots on last year's wood that are not required for bearing or extension to two or three leaves, so as to form spurs; but do not overcrowd the trees with foliage. These stubby side shoots often give good results whilst the trees are young, setting and stoning the fruit better than is the case on strong young wood. Pinch laterals at the first joint and successional growth as made. Avoid exciting too vigorous growth by the use of stimulants, using nitrogenous manures sparingly and an excessive supply of water at the roots, but employ phosphatic manure with a firm soil, so as to secure a free fibrous root formation and sturdy, short-jointed, thorough solidified wood.

Melons.—In houses or hot-water heated pits where the fruit is ripening, a rather dry and warm condition of the atmosphere will be required, allowing a circulation of air constantly, moderating the moisture at the roots, but if the soil be kept too dry the foliage will suffer, the fruit being deteriorated in juiciness and quality, while the prospects of a second crop will be seriously interfered with if not rendered impracticable. When the crop is cleared prepare for another. If the plants have fallen a prey to red spider thoroughly cleanse the house, the woodwork with softsoapy water, the glass with water only, limewashing the walls, and removing the whole of the soil. If fermenting materials have been used for bottom heat add some fresh, and mix with the top foot or 18 inches of the old material, some of the most exhausted being removed. Make firm, put in ridges or hillocks of good strong loam, if not calcareous add some old mortar rubbish and road scrapings if deficient of grit. Tread well down in a couple of days, as the firmer the soil the shorter-jointed and more sturdy the plants will be, also more fruitful and the fruits more solid. In planting, too, make the soil firm about the roots, and the soil and ball being moist no water will be required until the plants have taken to the fresh soil. Shade for a few days from bright sun, and maintain a genial condition of the atmosphere by damping available surfaces in the morning and afternoon. Maintain a night temperature of 65° to 70°, 70° to 75° by day, ventilating between those degrees, keep through the day at 80° to 85° from sun heat, and close sufficiently early to increase it to 90° or more.



APIARIAN NOTES.

THE article in the *Journal of Horticulture* for May 10th has apparently aroused the anxiety of some bee-keepers to know how to obtain large yields of honey. Several letters of inquiry to that effect have reached me. I cannot, however, tell the inquirers any more than what has appeared in these pages from time to time for over thirty years.

SOME GOOD HONEY.

Having some business to transact near Lesmahagow, and being anxious to see some of my old friends, I risked the journey on

May 31st, a cold and raw morning, and in some places through the day severe thunder storms, accompanied by hail, were experienced. Newtrows is only a mile from Lesmahagow, so to that place I went to see Mr. Grierson and other bee-keepers. Both Mr. and Mrs. Grierson gave ample testimony of their handicraft in bee-keeping. Mr. Grierson makes all his hives, whether they be of straw or wood, although not a tradesman. His honey is of excellent quality, and it is a pleasure to partake of it. Mrs. Grierson does not approve of glass as storage receptacles for honey, but the old Scotch earthenware jars are still her favourites; and I must say many of the samples of honey I tasted that day were deserving of not only the first prize, but an extra award if exhibited. It had none of that watery insipidness so common in extracted honey stored in glass jars, and was free from taint of pollen or old combs. It had been taken from sealed combs, quickly jarred, and stored in a dry place. The hive mentioned in the Journal of May 10th lost its queen during March, and when discovered had another introduced. It has twenty-two frames about "standard" size, and at the time of my visit completely crowded eighteen, the size of the hive being near the Lanarkshire storifying one.

BEES AND THE WEATHER.

Having many visits to make, and a break of journey, I had to speed on quickly, so called upon the brothers Cowie—old men, but as enthusiastic as they were half a century since. They were the pioneers of advanced bee-keeping in the district, not learned from books, but from nature. Mr. William Cowie I have been intimate with for more than thirty years, but his elder brother was a stranger to me. When introduced, he exclaimed, "I read some of your articles. You are right. Come and see this." Continuing he remarked, "The bee-keepers here would not believe what we said, so we made these to let them see what bees could do." These hives had fifteen frames, 20 inches by $8\frac{1}{2}$ inches, inside measure, and had two tiers of supers filled.

All the bee-keepers concur in the present year being the most disastrous to bees they have ever experienced. The effects of the storms and frosts are too apparent to imagine anything else. All have had to feed, while most of the hives are, in some places, on the eve of swarming. Some of them but for feeding would have been all dead. For about five or six miles in the heart of the fruit district I observed the Hawthorn blossom unharmed; but north and south of that it is all along, with many of the trees are blackened. At Larkhall I found bee-keepers feeding stocks and swarms.

THE SIZE OF HIVES.

There has been much debating over the question as to whether a hive should have eight or ten frames. Taking the largest size, each frame will have about 5000 cells. Not more than six of these can be used for brood, or, proportionately, space equal to six frames at the most; 30,000 cells in all is nearly what an average queen will fill in ten days at a time when the adult bees can cover all the combs. The other combs are required for food for both adult bees and brood, and which, to keep the internal economy of the hive in a progressive state, must have about 10 lbs. of honey stored. It will be observed that the space for egg-laying is half only what it should be. The difference in the number of bees hatching from a "standard" hive and a Lanarkshire one is apparent. At a certain time the former will have 30,000 bees, or perhaps much under that number, as I have made no allowance for drone comb, while in a full sized Lanarkshire hive at the same date 60,000 or 70,000 will have crept out of the cells. The larger the hive less space for storage is required—that is, proportionately, and instead of 70,000 at the end of three weeks 80,000 might be expected. The stronger the hive, too, the greater will be the heat. Consequently, more bees can go afield to gather honey, while they work with greater vigour than those from weaker hives. If bees of an undersized hive gather 2 lbs. of honey in a given time, those from a full sized one will gather in the same period at the same place three times as much, or perhaps a great deal more. A hive of Syrian bees of mine gathered 33 lbs. in one day. It was strong in bees and had much empty comb, and was about three times larger than any "standard" hive, which never will reach that weight in double the time.—A LANARKSHIRE BEE-KEEPER.

TRADE CATALOGUES RECEIVED.

W. Bull, King's Road, Chelsea.—*New and Rare Plants.*
 Dammann & Co., Naples, Italy.—*Bulbs, Roots, and Orchids.*
 J. Laing & Sons.—*Fancy-leaved Caladiums.*
 G. F. Strawson, 77, Queen Victoria Street, E.C.—*Greenhouses and Hothouses.*



*All correspondence should be directed either to "THE EDITOR" or to "THE PUBLISHER." Letters addressed to Dr. Hogg or members of the staff often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post, and we do not undertake to return rejected communications.

National Dahlia Society (Reader).—T. W. Girdlestone, Esq., F.L.S., Sunningdale, Berks, is the Honorary Secretary of this Society, and will, no doubt, send you a schedule on application.

Laxton's Sensation Strawberry (J. W. W.).—We hear on high authority that the variety named is a good grower and free bearer. Your small plants may possibly be all the better next year through not flowering this, and we hope the variety will prove its adaptability to your soil and position. Nearly all varieties are more or less capricious.

Book on Geometry (E. B.).—By persevering you will experience no difficulty in obtaining a fair knowledge of geometry from handbooks. An excellent and cheap work on the subject for beginners is "The School of Art Geometry," published at 1s. by Messrs. G. Gill & Sons, 23, Warwick Lane, Paternoster Row, E.C., and obtainable through any bookseller.

Aspidistra Leaves Brownd (F. W. F.).—The cause of the browning is some check to the growth, but it often results by moisture on the foliage, and exposure in that condition to the sun. The white or variegated leaves are more susceptible of injury than the green. It would be advisable to repot the plant, not necessarily dividing it, but removing a fair amount of the old soil, and using a compost of rich, turfy loam, one-third leaf soil, and one-sixth of sand, pressed down firmly. Good drainage must be provided, as the plant requires liberal moisture. After potting or dividing, the plants should be encouraged by moisture and shade to make a good growth; but as this tends to the production of green and the diminishing of the number of variegated leaves the procedure must not be carried too far, assigning them as much light as practicable without exposure to glaring sunshine.

Daisies on Lawns (Amateur).—There is no doubt about the value of household slops for applying to lawns; indeed, liquid manure of almost any kind is beneficial. We have recently inspected a lawn that has been immensely improved by being watered with the diluted drainings from a manure heap. The presence of Daisies in lawns is nearly always indicative of poverty of soil. An excellent dressing is a mixture of superphosphate of lime and nitrate of soda, two-thirds of the former and one-third of the latter, applied during showery weather at the rate of 2 ozs. per square yard at intervals of a fortnight. If dry weather prevails it is a good plan to well water the lawn before applying the fertilisers, and then again afterwards to convey their virtues to the roots of the grass. Mixtures of guano and salt and soot and salt also act beneficially, so also do bonemeal and wood ashes. We mention these different ingredients in order that you may use what is the most convenient or readily obtainable. The most effectual mode of destroying Dandelions and Plantains is to drop a little sulphuric acid into the heart of each plant. Some persons have found lawn sand effectual in destroying Daisies.

The Custard Apple (T. R.).—We cannot on the evidence of such young leaves venture to pronounce authoritatively as to whether your plant is a Custard Apple. There are between forty and fifty species of Anona or Custard Apple. Those commonly known are the Sweet Sop (Anona squamosa) and the Sour Sop (Anona muricata). The fruit of the former is green, covered with leafy scales, and not unlike the head of an Artichoke (Cynara). The fruit of the Sour Sop is yellowish-green, in shape not unlike a prolonged Strawberry, and covered with tubercular scales or knobs. It often weighs from 2 to 3 lbs. Both fruits on being cut show a white pulp, which in the case of the Sweet Sop is rather gritty, and in that of the Sour Sop rather pithy and very white. In this pulp the seeds are distributed. In neither case is their flesh very like that of the Melon, and the taste is sub-acid, and (as far as our experience goes) somewhat sickly. The seeds you have sent, though shorter and broader than those of Anona squamosa, have the black brown colour and the deeply furrowed albumen of the Custard Apples. It is also true that the leaves of Anona tripetala show the same strongly parallel-nerved character as that of the young cotyledonous plant which you enclose. It is possible, therefore, that it is Anona tripetala or Cherimolia, a native of Chili and Peru, and known as the Soft-fruited Custard Apple. The fruit of this species is roundish, scaly, and of a dark purple colour when ripe. If the plants are Custard Apples they should be grown in a very light position in stove heat, in good loam, containing a free admixture of peat.

Hardy Abutilon (M. A.).—Yes, there is an Abutilon which passes the winter outdoors in warm positions in the southern counties, also we believe in Ireland. It is *A. vitifolium*, and is said to have been introduced into Ireland from Chili by Captain Cottingham, in 1836. It had white flowers, and there is also a lavender coloured variety. We reproduce an illustration of *A. vitifolium*, with the following remarks, from which you will gather the desired information:—"A correspondent in Cornwall some time ago sent us a note upon this beautiful Abutilon, in which he remarked that he had 'a specimen 14 feet high and 32 feet in circumference at 6 feet from the ground, growing out of doors in a position sheltered from the north-east and west, where it flowered most abundantly every year.' Very rarely are such examples seen out of doors, and it is only in favoured climates like the west of England or some districts in Ireland



FIG. 75.—ABUTILON VITIFOLIUM.

where these results could be expected. In most cases where it is found in gardens it is an inmate of the greenhouse, and very seldom can an adequate idea be then formed of the beauty of the shrub when fully developed. The flowers are large, of a delicate purplish or bluish mauve, not unlike the stately *Meconopsis Wallichii* in tint and form. They are produced in great abundance, and in contrast with the large dark green lobed leaves they have a fine appearance."

Stocks, Asters, and Marigolds for Exhibition (T. G.).—The seeds for raising plants for this purpose ought to have been sown not later than April in gentle heat; but they may yet be sown in a frame, kept close and shaded from bright sun until the plants appear, when they should have all the light possible and air on all favourable occasions. The seed should be sown thinly to secure sturdy plants, and when they are large enough to handle prick off about 3 inches apart every way in rich soil in a frame, shading until recovered. In the course of a fortnight or three weeks they will be fit to plant out finally, which should be in an open yet sheltered situation in ground well prepared for their reception by deep cultivation and enrichment, allowing the plants abundant room—say, 2 feet for the Marigolds and Asters and 18 inches for the Stocks. The plants must be shaded from bright sun until established, be duly watered in dry weather, mulched with a little

short manure, and otherwise well nourished and kept free from weeds and insects. When the plants are advanced for flowering you will need to disbud the Marigolds and Asters, reserving the most promising buds, and shielding them from rain and fierce sun by shades or screens, so as to have them perfect in every way.

Removing Glass Case from Peach Trees (H. R. W.).—The trees would not be in any way injured by the removal of the glass case provided it were done after the wood became well ripened, say after the leaves have fallen in the autumn. They will, however, require protection in the spring, both for the blossom, young fruit, and tender foliage, from frost, without which it is not possible to grow Peaches and Nectarines satisfactorily against walls. With such care, and attention in other respects to keeping the foliage free from fungi and insects, thinning the fruit and watering, excellent crops can be grown against south walls. Some growers, however, find Pears more remunerative than Peaches and Nectarines in such places, and we found late Peaches in cases trained about 1 foot from the glass pay better than Pears, which, however fine in appearance, are very indifferent in quality when grown from first to last under glass.

Names of Plants.—We only undertake to name species of plants, not varieties that have originated from seed and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in firm boxes. Slightly damp moss, soft green grass or leaves form the best packing, dry wool the worst. Not more than six specimens can be named at once, and the numbers should be visible without untying the ligatures, it being often difficult to separate them when the paper is damp. (W. M.).—1, *Bambusa Fortunei*; 2, *Athyrium filix-femina*; 3, *Asplenium bulbiferum*; 4, *Pteris tremula*; 5, *P. umbrosa* (true); 6, *Anthericum variegatum*; 7, *Polypodium appendiculatum*. (G. D. H.).—*Fuchsia procumbens*. (Rusticus).—The purple flower is *Salvia pratensis*, the Wood Clary, the other is *Euphorbia rubra*.

COVENT GARDEN MARKET.—JUNE 6TH.

TRADE more brisk, the market being readily cleared at better prices.

FRUIT.

	s.	d.	s.	d.		s.	d.	s.	d.		
Apples, per bushel	2	6	to	10	0	Plums, per half sieve ..	0	0	to	0	0
Tasmanian, per case	8	0		12	0	St. Michael Pines, each ..	2	0		6	0
Grapes, per lb.	2	0		3	0	Strawberries per lb., morn-					
Lemons, case	10	0		15	0	ing gathered	1	0		5	0
Peaches, per doz.	6	0		18	0						

VEGETABLES.

	s.	d.	s.	d.		s.	d.	s.	d.		
Asparagus, per bundle ..	2	0	to	5	0	Mushrooms, punnet	0	9	to	1	0
Beans, Kidney, per lb. ..	1	0		1	3	Mustard and Oress, punnet ..	0	2		0	0
Beet, Red, dozen	1	0		0	0	Onions, bushel	3	6		4	0
Carrots, bunch	0	3		0	4	Parsley, dozen bunches ..	2	0		3	0
" new, bunch	0	9		1	0	Parsnips, dozen	1	0		0	0
Cauliflowers, dozen	1	6		3	0	Potatoes, per cwt.	2	0		4	6
Celery, bundle	1	0		1	3	Salsafy, bundle	1	0		1	5
Coleworts, dozen bunches ..	2	0		4	0	Scorzonera, bundle	1	6		0	0
Cucumbers, dozen	1	6		3	0	Shallots, per lb.	0	3		0	0
Endive, dozen	1	3		1	6	Spinach, bushel	1	6		3	0
Herbs, bunch	0	3		0	0	Tomatoes, per lb.	0	4		0	8
Leeks, bunch	0	2		0	0	Turnips, bunch	0	3		0	4
Lettuce, dozen	0	9		1	0	" new, bunch	0	8		0	10

AVERAGE WHOLESALE PRICES.—CUT FLOWERS.

Orchid Blooms in variety.

	s.	d.	s.	d.		s.	d.	s.	d.		
Arum Lilies, 12 blooms ..	1	6	to	3	0	Mignonette, 12 bunches ..	3	0	to 6	0	
Bouvardias, bunch ..	0	6		1	0	Narciss, various, doz. bunchs.	3	0		6	0
Carnations, 12 blooms ..	0	9		1	6	Orchids, per dozen blooms	1	0		9	0
Cornflowers, doz. bunches	2	0		4	0	Pæonies, dozen bunches ..	6	0		15	0
Eucharis, dozen ..	2	0		4	0	Pansies, dozen bunches ..	1	0		2	0
Gardenias, per dozen ..	1	0		4	0	Pelargoniums, 12 bunches	6	0		9	0
Iris, dozen blooms ..	0	9		2	0	Pelargoniums, scarlet, doz.					
Lilac (French) per bunch	2	6		4	0	bunches ..	3	0		6	0
Lily of Valley, doz. sprays	1	0		1	6	Primula (double), dozen					
" doz. bunchs.	4	0		8	0	sprays ..	0	6		1	0
Lilium candidum, dozen						Pyrethrum, dozen bunches	3	0		6	0
bunches ..	12	0		18	0	Roses (indoor), dozen ..	0	6		1	0
Lilium candidum, dozen						" Tea, white, dozen ..	1	0		3	0
blossoms ..	0	6		0	9	" Yellow, dozen ..	2	0		4	0
Lilium longiflorum, per doz.	2	0		4	0	Roses (French), per dozen	1	0		2	6
Maidenhair Fern, dozen						Roses, Safrano (English),					
bunches ..	4	0		6	0	per dozen ..	1	0		2	0
Marguerites, 12 bunches ..	1	6		4	0	Roses, Maréchal Niel, per					
Moss Roses (French), doz.						dozen ..	1	6		5	0
bunches ..	4	0		9	0	Stephanotis, dozen sprays	1	3		2	0
Myosotis or Forget-me-						Tuberose, 12 blossoms ..	0	4		0	6
nots, dozen bunches ..	1	6		2	0	Wallflowers, doz. bunches..	2	6		4	0

PLANTS IN POTS.

	s.	d.	s.	d.		s.	d.	s.	d.		
Arbor Vitæ (golden) dozen	6	0	to	12	0	Hydrangea, per dozen ..	9	0	to 18	0	
Arum Lilies, per dozen ..	6	0		12	0	Ivy Geraniums	5	0		8	0
Aspidistra, per dozen ..	18	0		36	0	Lilium Harrisii, per dozen	15	0		30	0
Aspidistra, specimen plant	5	0		10	6	Lobelia, per dozen ..	4	0		6	0
Calceolarias, dozen pots ..	6	0		9	0	Lycopodiums, per dozen ..	3	0		4	0
Cineraria, per dozen ..	4	0		6	0	Marguerite Daisy, dozen ..	6	0		12	0
Dracæna terminalis, per						" yellow, doz. pots	6	0		18	0
dozen	18	0		42	0	Mignonette, per doz...	6	0		9	0
Dracæna viridis, dozen ..	9	0		24	0	Musk, per dozen	4	0		6	0
Ericas, per dozen ..	9	0		24	0	Myrtles, dozen	6	0		9	0
Enonymus, var., dozen ..	6	0		18	0	Nasturtiums, per dozen ..	1	6		6	0
Evergreens, in var., dozen	6	0		24	0	Palms, in var., each ..	1	0		15	0
Ferns, in variety, dozen ..	4	0		12	0	" (specimens)	21	0		63	0
" (small) per hundred	4	0		8	0	Pelargoniums, per dozen ..	6	0		15	0
Ficus elastica, each	1	0		7	6	" scarlet, per doz.	4	0		6	0
Foliage plants, var., each	2	0		10	0	Roses, various, per dozen ..	12	0		36	0
Fuchsia, per dozen ..	6	0		9	0	" (Fairy), per dozen ..	9	0		12	0
Heliotrope, per dozen ..	5	0		8	0	Spiræas, per dozen	6	0		12	0
						Sticks, per dozen	3	0		5	0

Roots in variety for planting out, in boxes or by the dozen.



HAYMAKING.

"SWEET as a posy" was the scent of some new mown hay which we came upon at the end of May. It was a reminder in the most agreeable way that, though much of the hay crop is backward, especially on poor land, there is plenty of it so forward in growth that mowing must soon commence if we would have hay of the highest quality. What that is, and how to obtain it, may now be explained to good purpose, in time to induce more generally particular attention to it as a matter of the first importance.

What we want in hay is nutritive properties equal to those of the best summer pasture, upon which cattle and sheep fatten, and horses acquire lusty condition without other food of any sort. This can be managed perfectly by mowing while the herbage is sweet, succulent, digestible, soft cellulose, instead of hard, dry, indigestible fibre. The first and desirable condition is secured by mowing when the grasses are in flower, the last and objectionable condition is unavoidable when the flowers are gone and seed appears. After this has taken place, the nearer the first growth approaches to ripeness, the more tough and hard becomes the fibre, the more inferior the quality of the hay. No matter how favourable the weather may be, or how skilfully the hay is made, it is bound to be inferior in quality. Let there be no mistake about the term's significance. It points to sound, wholesome, nutritious food. High quality in hay runs through gradations of good, better, best. It is the best we want, and we can have it if our best mixed herbage of grasses and clovers is mown in the early stages of flowering, and the hay is really well made. It is then perfectly digestible, in the highest degree nutritious, and its intrinsic value as food is far above that of ordinary hay, however rich in aroma or high in colour the latter may be.

Early mowing also has the resultant advantage of an abundant aftermath, aftergrowth, edish, whatever may be the local term applied to the growth which follows the clearance of the hay crop. The earlier we can have that growth the more nutritious it is. When the haymaking is so late that it runs on through July into August, then the aftermath never can be so useful or so valuable. With the falling temperature of September there is a loss of richness of flesh and fat formers in pasture, and though there may be some useful "keeping" for sheep, cattle often require some crushed corn to keep them from falling off in condition.

It is always useful to arrive at first causes, and in this matter we may explain why there is so much late hay-making. First of all there is the evil of keeping stock too late upon the grass in spring. Then there is poverty of soil in the pasture—perhaps this should have had the first place, because the growth of herbage is always late on poor land. It is also often so thin and dwarf that it is left unmown till there is more bottom growth in order to obtain more bulk of hay. It is really owing to unreasoning mismanagement, to crass ignorance and stupidity. How can we expect a good hay crop if we do not cultivate the land? Really, to see the wretched apology for manure which many so-called farmers use, it would seem that they positively court failure. Cannot afford to do better? Then what business have they to come to us for land? If they hire it with the deliberate intention of taking all they can out of it, without a systematic and thorough application of manure, their conduct is culpable to say the least. It is as unfair to their landlord as it is hurtful to themselves.

By a judicious annual expenditure of a moderate sum per acre upon pure chemical manure, a full and early hay crop can always be had. We are again using such manures to good purpose on some poor pasture in a locality notorious for inferior hay crops and neglected pasture. Our mixture this spring consisted of steam bone flour, mineral superphosphate, muriate of potash, and nitrate of soda. Though we were compelled to apply it to the pasture fully a month later than we wished, we were fortunate in having a dripping time. There is now no doubt about the matter; already is there such a crop of herbage as was probably never seen previously in the two meadows, the growth being quite a foot in height, while that of most of the neighbouring tenants' land is barely 3 inches high. It is our intention to continue using a similar mixture of manures in these meadows every spring, so as to afford our doubtful tenants an object lesson—something tangible. The pasture is certain to improve, sustained fertility always does that; the outlay upon manures is certain to be well repaid this season, and to prove increasingly profitable in years to come.

WORK ON THE HOME FARM.

Icebergs in large numbers in the Atlantic have caused such a fall in the temperature in this country, that not only has growth been arrested, but it has sustained much injury. Rain, snow, hail, frost have been the chief weather alternations. Potatoes and Asparagus are cut down to ground, Broad Bean and Pea blossom is destroyed, much of the fruit crop has perished, in some instances even the unopened Strawberry flowers are cut off, corn and grass in many places has the top of the crop browned by frost. Most of the damage was done during the night of Saturday, May 19th. Rain was falling at 10 P.M., later on in the night the weather cleared, and there was a sharp frost, the thermometer falling 10° or 12° below freezing point in some of the midland valleys.

Among farmers, growers of fruit and vegetables for market are the greatest sufferers. Others may, and do, talk of a light hay crop on poor land, but apart from arrested growth they have little to complain of, and a warm dripping June will set things right. If the weather has been unkind, seed germination has gone on, the latest sowings of root crops are now up, and are showing a nice full plant. Many of the earlier crops of Mangold, Kale, and Cabbage are singled. Other similar work must be done quickly in its turn, as a change to warmer weather will set growth off with a rush, and much grass will soon be ready for the mower. Be on the alert with horse and hand hoes as the weather clears, and do the utmost to keep down weeds. Every weed is a robber of soil fertility, and it should always be remembered that in the prevention of weeds bearing seeds we are working for the future as well as the present.

Some old layers of Sainfoin and mixed seed left for spring feeding are being broken up as the flock clears the growth. There is a useful limit to such layers, those which it is worth while to retain longer than others being thickly sown with a few of the stronger growing Grasses, and which, therefore, do not become foul. By our system of an annual application of manure growth is well sustained in them, and they are profitable for six years, or even a year or two longer.

METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude, 111 feet.

DATE.		9 A.M.				IN THE DAY.				Rain.	
1894. May and June.		Barometer at 32°, and Sea Level.	Hygrometer.		Direc- tion of Wind.	Temp. of soil at 1 foot.	Shade Tem- perature.		Radiation Temperature		
			Dry.	Wet.			Max.	Min.	In Sun.		On Grass.
		Inchs.	deg.	deg.		deg.	deg.	deg.	deg.	Inchs.	
Sunday ..	27	29.661	46.9	43.2	N.E.	53.0	55.1	41.8	103.1	37.9	0.014
Monday ..	28	29.607	54.7	45.0	W.	51.9	56.1	39.3	102.0	35.1	0.038
Tuesday ..	29	29.615	49.8	46.3	W.	51.5	59.7	39.2	102.3	35.9	0.282
Wednesday	30	29.750	51.1	47.1	W.	51.1	61.6	41.9	109.9	38.0	0.199
Thursday ..	31	29.781	53.1	47.6	W.	50.9	63.1	39.2	115.6	34.0	0.086
Friday ..	1	29.914	60.0	52.3	S.E.	51.2	64.0	45.7	105.9	40.1	0.161
Saturday ..	2	29.708	58.6	55.4	S.	52.1	66.0	52.1	112.8	48.9	—
		29.719	53.5	48.1		51.7	60.8	42.7	107.1	38.6	0.779

REMARKS.

- 27th.—Rain till 4 A.M., and slight showers in morning; some sunshine in afternoon, and rain at 6.30 P.M.
 28th.—Generally sunny till about 11 A.M.; generally cloudy after, with occasional spots of rain and slight showers.
 29th.—Fine and generally sunny morning; heavy rain with thunder from 0.30 P.M. to 1.30 P.M., sunny again later, and frequent thunder and rain from 3 P.M. to 3.30 P.M., and from 7.30 P.M. to 9 P.M.
 30th.—Bright sunshine early; frequently cloudy after 10 A.M.; thunder and storm rains in afternoon; fair evening.
 31st.—Alternate sunshine and showers throughout, with frequent thunder in afternoon, and lightning at 2.40 P.M.
 1st.—Sunny early; generally overcast from 11.30 A.M.; spots of rain about 1 P.M., and rain at night; occasional thunder.
 2nd.—Rain till 6 A.M.; overcast till 11 A.M., and occasional sunshine after.
 A cold damp week with frequent thunder, but very little visible lightning.—
 G. J. SYMONS.



THE packing of flowers of various descriptions has to be accomplished by the majority of gardeners, especially in these days of economising, when the owners of many private gardens send their surplus produce into the markets. Where this is done, unless a good system of packing is followed, but poor returns can be expected for the flowers sent, as the slightest disfigurement affords the opportunity for rating their value far lower than the current market prices. Although such forcible lessons may not often be brought home to the consigner, there can be but little doubt that when such occurs they lead to the adoption of improved methods of packing. This is purchasing experience; but it is better to prevent such errors occurring.

In the case of flowers which are sent to town for the use of the family it is equally important that they arrive in good condition, otherwise no matter how well they may have been grown they compare unfavourably with the supplies seen in nurseries and florists' shops, and thus tend to create a feeling of dissatisfaction on the part of employers. Having, I think, now shown the importance of following good methods of packing I will pass on to the practical part of the work, giving those hints—for the benefit of the inexperienced—which I have found extremely useful during many years of active practice.

Before dealing with the actual work of packing it is perhaps necessary to devote a few words about flower boxes. It has often occurred to me that there is in many gardens a very scant supply of long shallow boxes suitable for packing such flowers as Pæonies, Gladioli, Delphiniums, and hosts of other flowers from the herbaceous border, which, for decorative purposes, require to be cut with a good length of stem. This is a decided mistake, as flowers with long stems are always in demand, and to have to unduly shorten them in order to place them into the boxes is, to say the least of it, a very undesirable proceeding. Another point to be considered is that flowers travel much better in large boxes (provided they are shallow) than in smaller ones; moreover, the cost of carriage is considerably less when the large box plan is adopted. A convenient size for boxes suitable for the above purpose is 3 feet in length, 18 inches in width, and 6 inches in depth. If the bottom and sides are made of quarter-inch deal, and the ends of half-inch, sufficient strength for the purpose will be obtained, while the weight of box will be reduced to a minimum.

For choice flowers boxes of various sizes may be obtained of local grocers. Those which have been used for the conveyance of cocoa I find extremely useful, as they are of a handy size, and just deep enough to hold a layer of Roses, Carnations, or similar types of flowers. Perhaps the only point to be urged against them is that they are rather heavier than is really necessary. When a supply of these boxes is obtained it is a good plan to place them in water for a few hours so that the conspicuously coloured labels may be readily removed, the boxes washed, and when dry stored ready for use.

A cardinal point to be attended to in packing flowers is to have the petals dry, otherwise disfigurement is certain to follow wherever they touch each other. For this reason I do not favour the plan of gathering and packing at once outdoor flowers when a heavy dew is upon them. When this is done they may certainly arrive at their

destination without the slightest sign of withering, but instead they will usually be browned and bruised, which is a far worse state of affairs, as there is no possibility of their recovering from it. Whenever, therefore, it is necessary to pack them in early morning they ought to be laid out thinly on a shelf in a room to dry slightly before being packed; half an hour is usually long enough to effect the desired result. In wet weather it is sometimes necessary to spread them out in this way for several hours before packing.

When flowers have to be sent several hundred miles I find the following is an excellent plan:—Cut in the evening or early morning, and stand the stems in water for a few hours before packing, taking care not to wet the petals of the blooms. This may easily be accomplished by having a number of shallow tins with a little water placed in them, the stems being stood in this, and the flowers rested upon a thin strip of wood placed across the top of the tin, and each row of flowers provided with a separate strip of wood. Flowers with long stems can, of course, be placed in vessels having a much greater depth of water, and the dividing strips of wood will be unnecessary. With care in packing—in addition to the preparation just described—ordinary flowers will reach their destination in a perfectly fresh condition.

In packing all kinds of flowers it is important to so arrange them that they do not shift and jostle against each other should the box be turned upside down, or be otherwise roughly handled. Close packing answers the purpose in the case of the majority of flowers, but with delicately formed ones this will not do, but means must be provided for holding them in position, while at the same time the petals do not touch each other. Camellias, Eucharis, Gardenias, and some kinds of Orchids require this treatment. A good method of carrying it out is to select boxes just deep enough to hold the flowers after a thin layer of cotton wool covered with tissue paper has been placed in the bottom. The flowers can then be arranged in rows across the box, each row being secured by means of a strip of deal placed over the stems, and held in position by being wedged against the sides of the box. A strip of tissue paper stretched across the top of the box and held securely by the lid will keep the inside of the box air-tight without touching the petals of the flowers. The more completely air is excluded, the fresher the flowers will remain.

Callas may also be packed in the same way, with the addition of a little cotton wool being placed in the centre to keep the style from injuring the spathe. Lilioms of the candidum and longifolium type also require a little cotton wool to be placed between the individual flowers to keep them from rubbing against each other. As a rule I like to pack only one layer of Roses in each box, but in the height of the season, when large numbers have to be packed, I use the large sized boxes above described, and place in them two layers, a sheet of tissue paper being placed between the layers. Tuberoses travel well if placed quite closely together in shallow boxes, with a little damp moss underneath and tissue paper on the top. Carnations of the "Malmaison" and Victoria types travel fairly well as long as only one layer is placed in each box, but the smaller border varieties may be packed *en masse* in boxes 6 inches deep.

Flowers, and especially those of a fleeting nature, should be cut "young," that is before they have expanded. Many kinds if fairly showing their colours will open freely in water after travelling much more safely over a long journey than they would if left another day on the plants. All gardeners can and should make experiments in this direction; many have done so, but not all, and acquired useful information. It may be that some have not felt the necessity, but all the same they will not err in acquiring practical knowledge on the subject, so that they may not fail when called upon to carry out what is required of them with credit and success.—D. W. C.

MELON CULTURE IN FRAMES.

MELON growing in frames is not practised at the present time to the extent it was years ago, inasmuch as houses can now be built and heated with hot water without very great expense. In the latter better Melons can be produced as a rule, and with much less trouble, especially where they are required early. To obtain fruit in May from plants grown in frames on hotbeds is not a very easy matter, though I think it is correct to say that many gardeners have produced ripe Melons early in that month before houses were so numerous as they are now, and doubtless there are persons who could give their experience of growing them in the old-fashioned way in pits sunk in the ground.

To obtain satisfactory results hotbeds should be made for growing Melons in frames. The material must consist of manure from the stables, and be properly prepared by turning two or three times to sweeten, all lumps shaken to pieces, and if at all dry apply water as the operation proceeds. Prepared in this manner the heat will last much longer, and will not be too intense at first. It will take about a fortnight or three weeks before the material is ready for making the bed, the size of which must depend on the size of frame or frames to be used. It should be large enough to allow about 9 inches margin all round the outside of frame. In making the bed do not tread the manure, but beat well down with the back of the fork. This will cause it to settle even, and the heat to be better distributed. If early in the season the bed should be not less than 4 feet high at the back and 3 feet 6 inches in front; later on when the weather is warmer 6 inches or a foot less than this will do.

With care fruit may be obtained for at least three months; but it is not advisable to plant before the first week in March, or much later than the end of May or in June. It takes about three months to produce ripe fruit, so plants put out early in March will have Melons ready in June, while those planted at the later dates will perfect crops at the end of August or in September, though the weather will to some extent influence this. The seed should be sown from four to five weeks before the time required for planting, as young healthy seedlings do better than those that have been root-bound for some time. A moderately heavy loam is best suited for growing Melons, and nothing ought to be mixed with it; but if the loam be very close and heavy one part in five of burnt garden refuse may be incorporated with it. This will not only render the soil porous but will also act as a stimulant. Ordinary garden soil will do unless it is very rich in humus, this latter inducing a too sappy growth. When the frame is ready for the soil, which will be in about a week or more according to the heat in the bed, it is a good plan to procure some fresh turves and lay them grass side downwards on the manure, putting the soil on these. The turves will prevent the roots being burnt should the bed be very hot. Sometimes the heat will remain too strong for a long time and cause a delay of planting. If such occurs make some holes in the sides of the bed, which will soon reduce the heat; these ought to be filled immediately the temperature ranges from 80° to 90°. Put in about one-third of the soil, laying it in a ridge along the centre of the frame; the rest may be added by degrees, the last addition being made just after the fruits are set; but exercise care in putting soil in the frame at this time, for should the stems of the plants be twisted or damaged in any way it may cause canker.

Keep the plants well up so that the water, when it is applied, may have a tendency to drain away from the stems. The latter will also receive more light, consequently will be hardier. Two plants can be placed in each light close together, one trained to the back, the other to the front of the frame. These need not be stopped until they reach to within 9 inches or a foot of the frame. Another, and, in my opinion a better plan, is to place one plant in each light. Pinch the point out when it has made four leaves, and this will result in four growths being made, which may be trained to each corner, and stopped as advised for the others. The laterals that push from these should bear both staminate and pistillate blooms. Sometimes the latter may be absent, and if so these laterals must be stopped at one leaf. The secondary growths will then invariably give fruit-bearing blooms. This rule also holds good when a lateral takes the lead of others. As many pistillate flowers as possible should be open at once, so that they may all be fertilised about the same time. By attending to the above rule this can generally be accomplished. When two or three fruits set and commence swelling prematurely, it is a difficult matter to induce the remainder of the crop to finish. A dry and brisk atmosphere should be maintained when the plants are in flower. Look over the blooms about noon each day, and fertilise until sufficient are set. The number will depend on for what purpose the fruit may be wanted. As a rule medium-sized Melons

are preferable to large ones for ordinary purposes, so that six or seven will be a fair crop for each plant to carry, and about four if larger fruit is required.

When the fruits have set, all blooms should be picked off and no more allowed to open. Attend to the plants as regards stopping, which is a very important point in growing Melons in frames. Laterals bearing fruit ought to be stopped at one or two leaves beyond the fruit, and succeeding growths at one leaf, unless any part of the frame is bare, when a lateral may be allowed to extend a few leaves before being stopped. Pinching should always be done by the finger and thumb, and in the early stage of its formation. It is a mistake to allow a large number of long growths to be made, and then to cut these all away at one time; in fact, a knife should never be used. If from pressure of other work, however, the plants are neglected, thin them out by degrees, and choose if possible a bright sunny day. The great thing to be aimed at is to have the frame full of good sized robust leaves, but no more than will receive the benefit of the sun. A number of weak growths will often issue from the base, but rub these off, and do not allow the stem to be much shaded by the main leaves; this will act as a preventive of canker. Should the plants become infested with insects or the foliage damaged in any way, new growth must then be encouraged. Close stopping must not be resorted to when the fruits are ripening, or it will cause them to split. Immediately the fruits commence to swell each one ought to be laid on their ends on a piece of slate, inverted saucer, or flower pot to keep them clean.

The temperature should be 65° at night; 5° lower than this will not do much harm, but it must not go below 60°. The day temperature ought to be 70°, and with sun heat from 80° to 90°, with free ventilation. The frame will have to be covered with single or double mats at night, according to the state of the weather, until the second week in June, when they can generally be dispensed with. The necessary heat cannot be maintained without placing a lining round the frame; this may be about 2 feet in width at the bottom, 6 inches less at top, and should reach to the top of the frame. It need not be put up all at once, but by degrees, making it at the back first, and at the ends and front as required. When the lining is made the bed must be cut down even with the frame, or nearly so, mixing the material with that used for making the lining. Let out the hot steam from this if any goes in the frame, or it may injure the plants. Some moist sifted soil laid along the inside of frame will keep the steam outside. In covering the mats ought not to hang over the lining, for this will enclose the steam, but should be turned back, and a board laid along to keep them in position.

Melons require copious supplies of water, especially during hot weather, using it at a temperature of 70° or 80°. If allowed to become dry at the roots red spider will soon appear. Though abundance of water is required, the plants must not be damped every day, the same as a Cucumber; in fact, when the frame is full of foliage syringing ought not to be done, unless in very hot weather, when a fine sprinkling may be given occasionally at closing time. A close and moist atmosphere makes the leaves thin in texture, and very susceptible to injury. Water will be required once or twice a week, according to the weather. Choose a fine bright day for watering, and as early in the afternoon as possible, to be safe from the sun, so that air may be left on to allow the foliage to dry before closing the frame. In hot weather a little ventilation may be left on all night. Too much water must not be given when the fruit is ripening, but enough to keep the foliage fresh and green. It should not be applied nearer the stem than 6 or 8 inches, or canker may occur.

There are several causes of canker, some of which have been mentioned. Cold water applied to the roots, and a too low and moist atmosphere also favour it. During a spell of cold unless weather the plants should be kept rather dry. The stem may become wet through drip; but this can be prevented by putting a square of glass over it, elevated by a stick at each corner. Should canker appear, lime is a good thing to rub on the affected part and to lay round the collar, but when this becomes damp it must be replaced by fresh. Portland cement is also useful for the same purpose. I have found this better than lime in some cases. The fruit will require examining occasionally, for the under side may be damp and soft, and should be laid on one side to dry. Sometimes woodlice give trouble when the fruits are ripening by eating holes in them, especially on the under side; traps must be laid to catch the pest, or a toad can be put in the frame. If a fruit is inclined to crack round the stem before it is ripe enough for cutting, the lateral which bears it should be cut half way through to check the flow of sap. Melons are better cut a few days before being used. If the plants are clean and healthy, when the fruits are nearly full grown, a few growths may be allowed to extend from near the

centre of frame, and when the crop is cut the old parts can be removed, the young growths being encouraged. These will flower and set very freely, and by proper attention to stopping and watering a second crop of fruit may be obtained.—J. S. UPEX.



LYCASTE COSTATA.

THIS Orchid, represented in the illustration (fig. 76), is not so extensively grown as are some kinds, but it is worthy of greater attention than is usually given it. The colouring of the bloom is exceedingly peculiar. The sepals and petals are greenish, the lip white or yellow tinted. It was received from the Cordilleras some years ago, and as a rule can only be found in collections of Orchidic curiosities.

NIGRO-HIRSUTE DENDROBIUMS.

THESE species of *Dendrobium*, the stems of which are covered with minute black hairs, are quite a distinct section of the genus. They are all attractive and beautiful plants. Though not so easily managed as most of the other kinds, they can with care be induced to grow and flower for a number of years, providing healthy plants are procured in the first instance.

Probably the best known of this section is *D. formosum*. This species when imported can be easily established on teak, birch, or other hardwood blocks. Newly sawn oak is unsuitable for Orchids. After one set of pseudo-bulbs has been made the bare block treatment is, however, too poor for this species, and something in the way of compost must be given, either by dressing the blocks with sphagnum or by inserting them entire into hanging baskets. Rafts are also very suitable if lightly dressed with moss, and preferable to baskets because of the free exposure of the roots to air. *D. formosum* delights in a hot and very moist atmosphere while making its growth, and should never be quite dry at any time. Although most of the nigro-hirsute species are naturally deciduous, the blossoms are always finer under cultivation from bulbs that have retained their foliage through the winter.

D. infundibulum is a very elegant species when well cultivated, requiring less heat than *D. formosum*. It is most satisfactory when grown in small pots in a temperature such as suits the warmer section of *Odontoglossum*, or rather cooler than the *Cattleya* house. *D. Jamesianum* is said to be a variety of *D. infundibulum*, but is a little different in habit. The lip is also marked with orange red instead of yellow as in the latter, but the culture is in every way similar.

D. draconis is another superb species requiring tropical treatment while growing. It is more easily grown than *D. formosum*, and unlike that species requires a good season of rest in a cooler house. Very little water is required from November until March, but the somewhat slender pseudo-bulbs must not be allowed to shrivel.

D. Lowi is a kind seldom seen, but very distinct and pretty. The flowers are pale yellow, with crimson lines on the lip. I have grown this species on a block in an East Indian house, but although it flowered freely every year the growths made were never so good as the old pseudo-bulbs that were on the plant when imported. Cool treatment has been recommended for this species, but as I have never tried it I cannot say whether it would be successful or not. If any readers of the *Journal of Horticulture* have tried this plant in a cool house, it would be interesting if they would record their experience with it.

All the nigro-hirsute *Dendrobiums* are peculiarly liable to be attacked by yellow thrip. This pest must be kept under if the best results are to be attained, for no plant can continue in health with the constant drain upon its resources which the presence of these and other insects entails.

BRASSIAS.

Orchids that produce bright showy flowers are the most likely to become popular, and the absence of bright colours probably accounts for the unpopularity of Brassias. These Orchids, nevertheless, have many good points. They last a long while in bloom, are easily grown, and produce their flowers very freely. These latter are also very quaint in appearance, and considering the habit of the plants, are of comparatively large size. The cultural requirements of Brassias are of the simplest and most ordinary description. Grown in an intermediate temperature with peat and

sphagnum for a rooting medium, abundance of water while growing, and a decided period of rest, they will be a source of satisfaction and pleasure to anyone who gives them a trial.

B. antherotes is a fine species, possibly the best in the genus. The healthy vigorous spikes bear a large number of flowers. The sepals are long, slightly twisted, yellow. The petals are shorter, similar in colour, but with a dark brown blotch at the base. The lip is yellow with chocolate markings. Each flower is upwards of 6 inches across. *Brassias Giroudeana*, *Lanceana*, and *Lawrenceana* are all very much alike. The flowers are a pale greenish tinge at first, deepening in colour with age to golden yellow spotted and barred with brown. They usually flower in order as named. In *B. maculata* the sepals and petals are more equal in length. The lip is large and prominent with purple streaks and spots.

B. verrucosa is a distinct and attractive species, which does well in a cool house. The flowers are greenish white, the lip pure white, with the exception of the singular warty protuberances that



FIG. 76.—LYCASTE COSTATA.

are thickly produced upon it. A very fine variety of this plant and *B. Wrayi* were in good condition recently at Mr. W. Bull's exhibition of Orchids.

BURLINGTONIAS.

Though by no means difficult to grow, *Burlingtonias* are not always seen in as good condition as is desirable. A frequent cause of failure is potting the plants in a mixture of peat and moss, such as used for pseudo-bulbous Orchids generally. They are also often kept too dry at the roots and in the atmosphere both during the growing season and in the winter. Frequently, too, white scale robs the plants of their strength.

With such species as *B. decora*, which produces its bulbs at some distance from each other upon the rhizome, it is a mistake to allow them to ramble away year after year, getting farther and farther from the compost. *Burlingtonias* require a rooting medium similar to that used for distichous-leaved Orchids, viz., a layer of sphagnum over, thorough and effective drainage, and a few pieces of potsherd or charcoal mixed with the layers of moss. They all thrive in baskets or shallow pans suspended from the roof in the *Cattleya* house. When newly imported *B. decora* and its varieties should be placed in pans filled with crocks, no moss being given at

first. After one set of pseudo-bulbs have been made fill up with moss and charcoal to the usual convex mound. The rhizome should then be notched half way through between each bulb, and these disposed equally all over the surface by tying or pegging down. Nearly every pseudo-bulb will start, and neat well furnished specimens will quickly be obtained. Light surfacings of moss should be given yearly; any pseudo-bulbs that are spent must be removed, and their places filled by pegging down the last year's growth.

B. candida and *B. fragrans* are more compact in their growth, and do not need this special treatment; but it is important that each year's roots have fresh material to run in, and that no decaying substance is allowed to remain about them. Directly after flowering is the most suitable time for repotting or surface dressing.

As before hinted, *Burlingtonias* are very liable to be attacked by white scale. This must be kept in check by frequent spongings, the sheathy bases of the leaves being carefully examined and cleaned, at the same time avoiding tearing or puncture.—
H. R. RICHARDS.

FLORAL FACTS AND FANCIES.—2.

DURING a large portion of the history of civilised man the flower garden has not only been to him a source of recreation and refreshment, it has been closely associated with most of the memorable events in his public and domestic life. From the records of distant ages we find that flowers figured at the celebration of religious festivals, victories, and games, as well as at the social events of family reunions, marriages, and funerals; they were employed to express reverence, grandeur, love, joy, or grief. Wild flowers from woods and fields were no doubt first used, but when a taste for horticulture developed showy and fragrant plants were cultivated, not merely to adorn the garden; they yielded besides a supply of flowers that had a symbolic meaning. Both easterns and westerns believed that most flowers, and leaves too, had a language; floral decoration, therefore, with suitable species answered the same purpose as putting up inscriptions. Hence places were lavishly adorned, and crowns or garlands worn; though amongst some nations there existed an idea that wearing flowers implied effeminacy, and was a fashion befitting women, not men.

Oddly enough, it was also believed long ago that if a woman put together a bouquet, this indicated she was in love. "The wreathing garland in a woman is the usual symptom of a lovesick mind," a poet has said. Something in the beauty and delicacy of flowers seemed to link them to what we used to call the "softer sex," hence the feminine appellations given in former times to many species. But it has been remarked that the name of the nymph *Amaryllis* ought not to have been conferred upon a tribe of plants which are notable for qualities that we would not wish to believe womanly. Since the *Amaryllids*, as an order, are deceptive species, beauty is frequently displayed in their flowers, while a dangerous poison may lurk within stem or bulb. Some persons have supposed that the handsome *A. lutea* is the Lily of Scripture, but probably that is the scarlet *Martagon* Lily, which delights in the Syrian valleys, though also found about mountains. Very regal, however, is the former with its golden blooms; common in Greece and Turkey, it is often planted upon graves as a token of the love of survivors. The showiness observable in the genus *Amaryllis* has made them, symbolically, the representatives of "vanity." Quite a contrast to these is the lowly *Snowdrop*, "herald of the flowers," says Westwood, which comes forth bravely holding its white flag of truce, and entreating stern winter to free its many brethren from their long imprisonment. Its familiar name points us to the old legend, that, when Eve was grieving at the first snowstorm, an angel assured her the spring would come again, and as a token, taking some of the snowflakes he transformed them into this flower. Hence the *Snowdrop* may mean both "consolation," and "hope."

Like many of its relatives, it has acrid qualities in its roots; so too has the *Daffodil* or *Lent Lily*, so-called, but properly a *Narcissus*. There is a quaintness about its longer English name of *Daffodowndilly*, which is allusive to its sometimes covering dells as a wild flower. One poet, Herrick, regarded the golden *Daffodils* pensively, seeing in them a comparison to the brevity of human life:—

"We have short time to stay like you,
We have as short a spring."

Jean Inglelow speaks of it, but not in terms of praise; it is a plant of evil omen, though by some of the writers on plant meanings the species is taken to imply "regard." The *Narcissuses*, we remember, are named from the crazy youth of classic story who gazed upon his own image in the stream till his excessive admira-

tion of his shadow ended his life. When the nymphs mourned for him, and sought his body, they could only discover this floral memorial of him, the *Narcissus*, seemingly the *N. poeticus*, with its white petals and yellow nectary. But some have fancied that the *Narcissus* of the ancients was a purplish flower, not this poet's *Narcissus*, which, however, is likely to continue a symbol of "egotism."

That quality, or self-conceit, might be supposed to characterise the majority of our showy garden Tulips. Many-hued, their name is said to have been suggested by the turban-like appearance of the flowers. Special significance, however, is attached to some kinds, for a red Tulip bears the same meaning as do other flowers of that colour. Its resemblance to a blush symbolises "love declared," but it is not so obvious why a striped Tulip should remind us of "beautiful eyes," and "hopeless love" might be expressed, it seems, by handing to anyone a yellow Tulip. Yet another meaning is said to belong to the whole Tulip tribe by some authors. They are flowers that represent fame, because their size and brilliancy make them conspicuous; their beauty is not hidden or concealed like that of some species. I should have noted, when referring to the *Fritillarias*, that one variety, the *Crown Imperial Lily*, passes for an emblem of majesty or power, rightly enough, and "persecution" is another symbolic meaning given to the spotted varieties. The *Gladiolus* is a flower that may be considered as particularly suitable for the decoration of members of our Volunteer Forces, since it signifies that one is "fore-armed against all foes."

We always welcome the *Crocus* (so too does our enemy the sparrow) a harbinger of spring, its name expressing the general colour of the tribe. Its apparent courage in braving the rough winds of March has made it an example of "cheerfulness," also, according to some, of "youthful gladness;" and the early purple variety suggests "hope" of successive flowers as the season progresses. To the *Saffron Crocus* much more importance was given by our ancestors as a garden plant than it receives in the present day, our *Saffron* supplies coming chiefly from abroad. Formerly *Saffron* was valued not only medicinally, and as a dye, but also employed in household cookery, so that it had a recognised place amongst garden plants, being both ornamental and useful. A memory of it lingers even in central London, where *Saffron Hill*, near *Holborn*, is named from the crops of the plant which at one time grew upon a spot when it was part of the garden of old *Ely House*. Though there has been some discussion as to the symbolic meaning of this historic plant, which has its name from the Arabic, there is very little doubt that the warning, "Be not too trustful," was thought to be conveyed by its flowers. Our garden *Aloes* are representatives of Oriental plants of aromatic nature, largely used at one time by the ancients in embalming, and at funerals, hence the plant represents "superstition," also "grief," 'tis said.

Conspicuous in many lands on the borders of rivers, or beside the sea, are the *Arums*, our beautiful white species being commonly called the *Nile Lily*, though really of another family. In flower language they represent "ardour," or "enthusiasm," appropriately perhaps. Curious and numerous are the names given to our native *A. maculatum*, a plant which it is needful to caution children against, for the scarlet berries are apt to attract during summer. *Wake Robin*, *Cuckoo Pint*, *Lords and Ladies*, *Parson in the Pulpit*, are familiar to us as appellations, the last of these reminding us of the time when all preachers were enclosed in a box, with sounding board overhead. But the point may be doubtful, whether the purplish spikes are the lords or the yellow and green ones.—
J. R. S. C.

THE NUTRITION OF ROOTS.

I AM sorry if I have run off the rails in this matter. I have now re-read Mr. Raillem's original communication (page 388). The point appears to be whether plants take in their food in the form of water or as vapour. Mr. Raillem seems to infer that it is not exactly either, for he speaks of "vapour moisture, which has not yet passed into actual vapour in the air." Now, as far as I know, water exists only in two forms—water and vapour. Water will hold in solution all the matters that go to form plant food, vapour will not hold any of them. The conclusion is obvious.—
D. GILMOUR.

BEING pleased with the article by "W. R. Raillem" (page 388), and as I had been cogitating on the same subject of late, I give my opinion for what it is worth. Some plants other than aquatics grow in water and in boggy places. Some of these marsh plants, too, thrive in a dry soil, and others prefer the banks of a stream, where the roots dip in the water. I cannot classify the above, but it is sufficient for my purpose to know such things. Some plants subsist wholly in the air attached to others, although not strictly speaking parasitic.

Plants generally cultivated appear to imbibe moisture by their leaves from the atmosphere, both in a gaseous form and when it is condensed upon the foliage. We see this frequently when leaves are wilted; they become erect and heavier when the atmosphere is in a proper condition, although no water is applied to the roots. On the other hand, plants take up much water by the roots, which is apparent when we give them a "drink" before planting, the water is diminished, and the plants are heavier. For many years I have practised allowing plants to wilt, then put them in water till they are revived. This plan is better than saturating and cooling the soil, and are adapted to stand drought afterwards, and consequently thrive better.

While plants take up water readily in the above and other forms, it must be admitted that the roots of plants feed readily upon evaporated moisture arrested in its escape from the earth by intervening matter likely to hold condensed moisture, as drinking troughs. We see rootlets clasping solids in the earth, I believe for no other purpose than for water condensed on them.

On the above principle I have long been of the opinion that vinery and orchard house borders should be specially constructed so as to assist Nature; with less heat above ground and more beneath, thus economising fuel, better results would accrue. My plan is to erect the vinery on a proper site, to allow a deep drain to take away all stagnant water. Above that, at intervals of 3 feet, I place aerating pipes communicating with the air at both ends, then one or more steam pipes near the bottom running the whole length of the border, which, by the way, should be free from surface water flowing on to it. At the lower end there should be a cement tank, so placed as to collect all water which passes through the border, but nothing more, that water to be used for applying to the border, as it contains soluble ingredients necessary for plant life. A pigeon-holed wall built round the border underneath the soil will nearly complete my ideal Vine border.—W. T.

IVY-LEAF PELARGONIUMS.

A WONDERFUL improvement has been effected in these charming flowers during the last few years, and they have now become such general favourites that but little need be said in their praise. They continue to bloom freely throughout the whole of the spring and summer months, and the display produced by them in the greenhouse or conservatory will amply repay for the necessary care and attention bestowed upon their cultivation. In addition to their good qualities before mentioned, I think this section of Pelargoniums owes its increasing popularity in a very large extent to the ready manner in which it adapts itself to the variety of positions in which it may be grown. For draping wall and pillars, training over balloon trellises, or cultivating in hanging baskets they are invaluable. They are also equally useful for planting in window boxes, terrace vases, or, indeed, any other position fancy may suggest. It is very essential that they should derive as much benefit from the sun as possible, for if placed in too shady a place it is next to impossible to obtain that firm short-jointed growth so necessary to induce the plants to flower freely, and in the absence of which it is, practically speaking, useless to expect satisfactory results.

In this article, however, I wish more particularly to direct the attention of the readers of the *Journal of Horticulture* to the utility of Ivy-leaf Pelargoniums as wall plants. When well grown I have no hesitation in saying they will successfully vie with any other cool house climber in cultivation. I have a plant of *Souvenir de Charles Turner* growing on the wall of the greenhouse, and the display produced by it at the present time evokes the admiration of all beholders. It covers a space of 9 feet by 6 feet, and is carrying upwards of 250 trusses of bloom. Although these plants are not as a rule very fastidious as regards the treatment and nature of soil, I find it is much the best plan when planting them out to bestow a little more than ordinary care in preparing the border for their reception. My method of cultivation is as follows. Having selected the position where I intend to plant, I next remove all the old soil to a depth of about 18 inches and about 2 feet in width, after which some slates or boards are placed around the sides of the hole for the purpose of retaining the roots in the space allotted to them. Upon this item to a very large extent hangs the future success or failure of the undertaking. Where practicable I would strongly recommend slates to be used, for not only do they last a greater length of time, but they are not so likely to breed fungus as is the case when boards are employed. The next thing to claim attention is the drainage. This may easily be effected by placing a quantity of clinkers or old brick rubble in the bottom of the hole, covering them with a layer of long straw.

After the foregoing instructions have been properly carried out, prepare the soil. This should consist of fibry loam two parts, leaf soil one part, one part burnt earth, with a good sprinkling of sharp sand, and a fair addition of charcoal, the latter being indispensable in keeping the mixture in an open and wholesome condition. Having well mixed the different ingredients together, the hole should be about three parts filled, leaving room to top-dress at a later period. The plant ought then to be planted, spreading the roots evenly and regularly over

the soil, which make tolerably firm afterwards, giving a good watering to settle the compost well about the roots.

Where the foregoing instructions are properly carried out, and the plants are attended to say once a week for the purpose of tying and regulating the growths, I am confident that the result will be one of great satisfaction.—GEO. PARRANT.



ROSE SHOW FIXTURES IN 1894.

- June 20th (Wednesday).—Isle of Wight (Shanklin).
- " 26th (Tuesday).—Westminster (R.H.S.).
- " 27th (Wednesday).—Windsor (N.R.S.) and Richmond (Surrey).
- " 28th (Thursday).—Canterbury, Eltham, and Sutton.
- " 30th (Saturday).—Sittingbourne and Brockham.
- July 3rd (Tuesday).—Farningham, Bagshot, and Diss.
- " 4th (Wednesday).—Croydon, Reigate, Tunbridge Wells, Ealing, and Ipswich.
- " 5th (Thursday).—Hereford and Norwich.
- " 7th (Saturday).—Crystal Palace (N.R.S.).
- " 10th (Tuesday).—Gloucester and Wolverhampton.*
- " 11th (Wednesday).—Hitchin and King's Lynn.
- " 12th (Thursday).—Bath, Harleston, Woodbridge, and Worksop.
- " 14th (Saturday).—New Brighton.
- " 17th (Tuesday).—Helensburgh.
- " 19th (Thursday).—Halifax (N.R.S.), Halesworth, and Trentham.
- " 21st (Saturday).—Manchester.
- " 24th (Tuesday).—Tibshelf.
- " 26th (Thursday).—Southwell.
- " 28th (Saturday).—Bedale.
- Aug. 1st (Wednesday).—Chesterfield.

* A Show lasting three days.

Any date of Rose shows, or of other horticultural exhibitions where Roses form a leading feature, not named above, I shall be glad to receive as soon as fixed, for insertion in future lists.—EDWARD MAWLEY, *Rosebank, Berkhamsted, Herts.*

NATIONAL ROSE SOCIETY.

THE Dean of Rochester, President of the National Rose Society, writes me as follows:—"I have heard from Sir John Cowell that the members of the National Rose Society will be permitted to see the Royal Gardens at Frogmore on the 27th inst. by command of the Queen." The thanks of the members of our Society are due to the President for his influence in obtaining this Royal favour, which is unusual during Her Majesty's residence at Windsor.

DATES OF ROSE SHOWS.

A few lines in reference to the avalanche of letters in last week's *Journal of Horticulture*. "X." (page 454) thinks it a surprise that the Ryde Society have postponed their Show to the 14th inst. from the date of the 7th. The only remarkable part of the matter is their first fixing the earlier date. Mr. Frank Cant and I were both consulted six weeks or two months ago as to the best date for the meeting of the Isle of Wight Rose Society, and we suggested to their executive the 17th or 24th June. The Ryde Show is not exclusively for Roses, whereas the Isle of Wight Society have nothing but Roses at their meeting.

In reference to "East Anglia's" letter (page 455), I suppose when he refers to a "heated discussion" he goes back to last year, as the recent letters in the *Journal* were harmonious. I cannot say I am "penitent," my views are perfectly unchanged and unchangeable, as I am advocating, and will continue to advocate, the cause of the metropolitan members, who constitute the backbone of the National Rose Society in finance, who cannot be satisfied with any but a metropolitan meeting about the 1st July, and who certainly would not have been pleased with the date proposed by the party to which I am opposed on the N.R.S. Committee.

I may say, however, that although I am not penitent on the date question, yet I am much grieved at the destruction of the prospects of my friends' Roses, and to know that men like Mr. Lindsell, Mr. Machin, Mr. Romaine, and Mr. Kitchin, amateurs in the truest sense of the word, who are devoted to the Rose garden and its work, and others like Messrs. Harkness, last year's champions, and Messrs. Dickson of Newtownards, our great hybridisers, have suffered so terribly by the frost of the 20th May and subsequent weather. If "East Anglia" thinks my views can be so easily altered on a question I have carefully considered, and discussed for two years, merely by the destruction wrought by one night's frost to the most promising Rose harvest of the last twenty years, he must think me unstable. Have I shown myself so to be?

The one great drawback in anonymous writing, to which "East Anglia" refers, is in the inability of the reader to fix the value of the writer's opinion, and "East Anglia" will pardon me for saying that most of the leading amateur and professional rosarians now more usually sign their names to correspondence in the press, and it

materially adds to one's interest in reading their communications. The cloak of anonymity to my mind is usually synonymous with some weakness in the writer, either moral or physical—the latter is to be pitied, the former deplored; but I also think it is frequently used for malice, to which I regret to say even rosarians at times seem prone.

THE ROSE PROSPECTS.

As regards the present position, there seems a very unusual divergence of opinion as to the ultimate effect on Roses of the recent frost. Several very important amateurs and professionals have suffered no loss, and others have only been lightly affected. So far I believe the western growers seem to have escaped with comparative or entire immunity. Mr. Prince writes me from Oxford, and Mr. Mount from Canterbury, that their Roses are untouched. Mr. Mawley also told me on Sunday that Roses in most parts of Kent, where he has recently been, have not a vestige of frost injury observable. In this district we appear to be as badly hurt as I previously feared and noted. There can be no doubt that the season would have been abnormally early only for the change subsequent to the 15th May, and it is apparent in the fact that notwithstanding the bad weather of the past three weeks many beautiful Roses are now gathered from the open. In the last week, in the Stock Exchange, I saw flowers of Edith Gifford grown by friends at Streatham, Rubens and Ernest Metz from Dartford, that in most Rose shows would have easily been the medal blooms, Ernest Metz being the finest specimen of that flower I have ever seen.

We now want sunshine and warmth, and not a repetition of the cheerless summer of 1888, which oddly enough followed the delightful warmth of the Jubilee year. I have for the moment mislaid my numbers for 1887 to 1890 of the *Journal*, which would give some clue to the prospects of the Crystal Palace Show next month, and also the position at the Metropolitan Shows in 1888 and 1890, the years following two recent hot summers; in the meanwhile would Mr. Mawley give the comparative number of Roses shown at the Crystal Palace in 1887-88, and 1889-90? I think this would be interesting.—CHARLES J. GRAHAME.

ROSE JOTTINGS.

THE recommendation of "Practice" (page 455) to take off all shoots upon standard stocks except those to be operated on seems to me to be wrong in principle and fact. To remove any shoots is to weaken the root power; to let them all grow as much as they will throughout the season is to have as much force as possible in the roots for the maiden growth in the following year. It is comparatively easy to bend the shoots about so as to work the stocks, and rosarians are not readily disconcerted by a few summer thorns.

Mrs. W. J. Grant would have been of no use in the list of new Roses in the N.R.S. report. It has only been sent out a week or two, and could not be legitimately shown this season except by the issuers. Why does "Practice" think he "will have to call it" Belle Siebriecht? I conceive there is no penalty for speaking and writing it as Mrs. W. J. Grant; at all events I am prepared to risk it.—W. R. RAILLEM.

ROSE REINE MARIE HENRIETTE.

As much as this Hybrid Tea-scented Rose is appreciated under glass, it is even more so when growing in a favoured position out of doors. It is one of the first to give us blooms, even amongst such early flowering varieties as Gloire de Dijon, Safrano, and William Allen Richardson. The colour, too, is enhanced by exposure, being several shades deeper than that possessed by blooms from under cover. This Rose is generally known as the Red Gloire de Dijon, although I confess to my ignorance in finding any affinity between the two, except it be in the number of blossoms each will produce.

ROSE GLOIRE DE DIJON.

One of the finest plants, growing against an open wall, of this Rose that I have ever seen is now in full flower upon the gardener's cottage at Fair Oak Lodge, near Bishopstoke. Not that the specimen is of such an immense size, but it bears an extraordinary number of blossoms. The flowers, individually, are extra fine in point of quality. The colour is exceptionally rich, proving that the soil in which its roots are running is especially suitable. Such examples of this fine old Rose goes a long way towards proving that for outdoor culture the old "Gloire" is still difficult to surpass.—E. M.

ROSES IN NEW ZEALAND.

FOR the information of "Rimu" (page 435) and of "W. R. Raillem" (page 445), may I say that I believe the "Seven Sisters," about which the former inquires and which the latter says he does not know, is Rosa Russelliana? It was used as a stock for Hybrid Perpetuals by Mr. J. Brown, the able grower at Great Doods, Reigate, and he kindly sent me some cuttings, and I have found it most useful. It makes a greater growth of fibrous roots than Manetti does, and these roots are not nearly so tender as those of the latter. "The Many-flowered Rose," as "Rimu" calls it, is a very apt description, for the plant is of semi-climbing habit, making pendulous growths of 4 and 5 feet long, which are clothed in clusters of pretty pale blossoms. The popular name, as I know it, is "Scarlet Seven Sisters."

REV. F. H. GALL.

May I also say a word as to the kindly disposition of the genial rosarian so lately taken from us? I have the warmest recollection of his looking on at one of my earliest attempts at staging a box of Roses,

and of the hearty fashion in which he said, "If that were my box do you know what I should do?" and then pointed out several improvements. And again and again from that day he was ready to advise and help, rejoicing always in the triumph of good flowers, whether in his own stand or someone else's. By-the-by, with the provision in the National Rose Society's schedule for beginners, will there not be many novices to whom we older hands can extend a word of encouraging advice with their exhibits? There probably will, and I trust we may all be found on the look out to do so, and thus to follow the example of our lamented friend in helping to popularise and to smooth the difficulties of Rose showing.

NEW ROSE—"MRS. W. J. GRANT."

I had noticed the omission pointed out by "Practice" (p. 455), and also that this variety was not mentioned in the advertisement of the raisers in the report. I wrote to Messrs. Dickson about it, and they inform me that the stock is still held by the American purchasers, and will not be sent out until 1895. I sincerely hope that "Practice" and all other members of the N.R.S. will not catalogue nor show this Rose except under the title "Mrs. W. J. Grant." It seems to me that it would be completely stultifying ourselves to award a medal to a flower under one name and then to list it and exhibit it under another!—J. B.

ROSES FOR HEDGES.

WE do not see these used for the above purpose so often as they deserve. The stronger growing Chinas, the Japanese or Rugosas, Sweet Briars, and probably some of those recently raised by Lord Penzance; such Hybrid Perpetuals as Général Jacqueminot and Fisher Holmes, also some of the Teas, of which Anna Ollivier and Madame Lambard, to say nothing of that grand old Bourbon Souvenir de la Malmaison, may all be used for hedges where a fence of fair width can be allowed. We have the Moss Roses, too, and the Scotch Briars, which make a very pretty hedge where one does not need a thin shelter or screen of some evergreen.

A hedge of Scotch Briars and one of the Sweet Briar are very pretty indeed in a neighbour's garden. The former is in full blossom, and although the latter is not so gay yet, it bears promise of soon being so, while the perfume is a constant source of delight.

Last summer I saw a huge hedge of the Rugosa Roses utilised as a division between the lawn and kitchen garden. From early spring until late autumn it was a picture. From the middle of May until end of September a sheet of bloom was produced, while during the latter part of that time and well into November the whole was gay with handsome berries nestling among foliage of the deepest green. Being cut back with shears in the ordinary way when the hedge encroached too much, the plants were little trouble, and a splendid screen all through the season.

OWN-ROOT ROSES.

The great outcry against all Roses in dwarf form that were not growing upon their own roots alone has suddenly dropped. Some three years back many persons were strenuously advocating this form of culture above all others, because some few propagators had done their work in a careless and slovenly manner. Where, may I ask, would our Roses be if it had not been for the assistance of various stocks in the raising of the splendid collections many gardens contain? Like many other things, it is really a question of judicious use of a means to a certain end, and because a few failures have occurred these must not be taken as positive proof that stocks are detrimental to longevity in the Rose garden. There are a large number of varieties that would be many years in making a presentable plant unless upon some suitable foster stock; in short, it is the proper selection and manipulation of these that leads towards the goal of success.

Different sections of Roses, and even some few varieties of each, have distinct likes and dislikes for certain stocks. The soil must also be taken into due consideration, as in no case can any Rose do well upon a stock to which the soil is unsuited. I do not wish to go to the opposite extreme and advocate stocks for all cases and all varieties, but to point out how much better a medium course is. Scotch Briars and Mosses, with Chinas and a few of the Bourbons, I firmly believe to be best upon their own roots, and they fortunately thrive in this form. But to attempt to grow the majority of our best Teas and Noisettes or Hybrid Perpetuals without the aid of some selected foster stock can only lead to comparative disappointment. Almost each variety has a decided preference for one stock over another, and the experience of large cultivators should at any rate carry some weight; but, unfortunately, when one has got a certain idea into their head it often needs much removing.

Because own-root Roses prosper so well with one person is no guarantee they will do so with all; nor, for the matter of that, will a given variety do equally well upon all stocks in the same soil, or upon the same stock in a different soil. With the vast number of Roses now in cultivation it is little matter for surprise that we have some most peculiar vagaries in the larger classes. When we bear in mind how these have been crossed and recrossed one with another the need for surprise is even less. However, all will do well upon the seedling or cutting Briar, or upon the hedge Briar where these stocks thrive. Even as pot plants I have no preference for own-root plants over those well worked upon some stock. If worked low, there are few Roses but what soon assist by breaking forth on their own account if the stock is not congenial, and any additional support cannot fail to be an advantage.—PRACTICE.



EVENTS OF THE WEEK.—The horticultural events of the ensuing week include the Floral Fête and Parade at the Royal Botanic Society's Gardens, Regent's Park, on the 20th. On the same day a Rose show will be held at Shanklin, Isle of Wight. The anniversary dinner of the Gardeners' Royal Benevolent Institution will take place at the Hôtel Metropole on the 21st, Sir Julian Goldsmid, Bart., M.P., presiding, and the exhibition at Boston, Lincolnshire, will likewise be held on the 21st inst.

— **THE WEATHER IN LONDON.**—Showery weather has been experienced in the metropolis since publishing our last issue. Sunday was for the most part fine, but rain fell at night, and Monday was characterised by heavy and frequent showers. Tuesday proved fine until the evening, when rain fell. Wednesday opened dull but fine.

— **THE REV. W. WILKS.**—The presence of the laborious Secretary of the Royal Horticultural Society at the Westminster Drill Hall last Tuesday was hailed with great and general satisfaction. His illness—a throat affection—has evidently been acute, and his steady progress to complete recovery is evidently hoped for by all who know him and long to hear his sonorous voice again. Only devotion to the Society and his friends could have induced Mr. Wilks to venture out on this occasion in his sad speechless but not spiritless state.

— **VEITCH MEMORIAL MEDALS.**—At the afternoon meeting of the Royal Horticultural Society on Tuesday last, Sir Trevor Lawrence, Bart., on behalf of the Veitch Memorial Trustees, presented Veitch Memorial medals to Colonel R. Trevor Clarke, Messrs. G. Nicholson, T. Francis Rivers, A. H. Kent, and James Martin. Mr. Charles Moore was also awarded a medal, but being curator of the Botanic Garden at Sydney and resident in New South Wales Mr. Veitch received the medal on his behalf.

— **THE ROYAL GARDENERS' ORPHAN FUND.**—At the monthly meeting of the Committee, held at the Hotel Windsor on the 1st, the special receipts announced included that of £10 10s., given annually by Mr. John Wills on the occurrence of his birthday; and a sum of £2 4s. 6d. from Mr. W. G. Head of the Crystal Palace, obtained by sale of flowers used by Messrs. Perkins & Sons of Coventry in their table decorations at the recent Crystal Palace Show. A report from the Dinner sub-Committee was laid upon the table, from which it appeared that the sum of £600 was received, including £10 10s. from the Lord Mayor, and £5 5s. from the Lady Mayoress. Votes of thanks were passed to the Lord Mayor for presiding, and also to Mr. James Hudson and Mr. J. Assbee for their valuable services in decorating the dinner table.

— **ESTABLISHMENT LOUIS VAN HOUTTE AND M. VAN ECKHAUTE.**—In celebration of his fifty years of service in this long-famed Belgian establishment, the administration gave a sumptuous dinner to the members of the staff, numbering 130, on the 20th ult. The usual toasts were proposed and suitably responded to, and everybody seemed to enjoy themselves most thoroughly. The firm had also been kind enough to grant a general holiday to all its employés on the following day. M. Van Eckhaute is well known in horticultural circles, and has been the recipient of many congratulations from various societies with which he is connected.

— **LATE-KEEPING APPLES.**—I may tell Mr. Palmer (page 446) the reason why the Royal Horticultural Society did not include Wellington in the list of cottagers' Apples was that the variety, all very well on young trees, is found to be a sad rogue on the Crab; when the trees become old cankered badly, and altogether proving to be most unreliable. It is a pity so good an Apple should be so. It ought always to be grown in bush form on the Paradise stock. Mr. Palmer's selection of Apples for late keeping after his fashion is not a very attractive one, as nearly all are notorious long keepers under almost any ordinary good conditions. Compare the selection given with that seen at the Temple Show put up by Mr. G. Bunyard, and all kept on open shelves in his ordinary fruit shed in the nursery. Nothing could be finer and more perfect than these were at the end of May. It is very evident that Apples can be kept well with simple means if the fruit be at first clean, well matured, and be always kept in an equable temperature.—D.

— **CURRENT BUD MITE.**—In reply to "Yorkshire" in your issue of the 31st May respecting the Currant bud mite you quote a dressing I used. My further experience has taught me that the advice you have given—namely, to pick when there are but few knots, is the better mode of procedure. This must be done as early after the fall of the leaf as it is possible to discern the knots during the first year of the attack, or little or no good will result. The mischief is done by the insect in its "caterpillar" state—as many as a score of which may be found in the thinner slice cut for a microscopic object—when it is completely protected by the outer scales of the bud and when no amount of dressing can reach it; and it is very questionable to me whether it is practicable to dress later with a view to destroying the mature insect.—ARTHUR BULL.

— **VIOLAS.**—This is a Viola season, and grand masses of colour are now to be generally seen. In the Birmingham Botanical Gardens a large bed, 24 feet long by 6 feet wide, on the terrace is now a brilliant mass of indigo blue, and is the admiration of every visitor. It is Dean's True Blue, the best of all the blue varieties, of close sturdy habit, each plant a compact mass of flowers from March until the present time, and it would continue so until August only that the beds must be cleared for the summer carpet bedding. The bed was planted in November with bulbs and this Viola, and another similar bed close by is now brilliant with yellow Violas, amongst which Tulips were also planted in November. If Violas were planted out early in the autumn or in March, strong plants and well rooted, then an early and continuous bloom is secured; but so many persist in buying their plants in the spring, even so late as May and June, and frequently failure results.—W. D.

— **THE WAKEFIELD PAXTON SOCIETY.**—Nearly 100 members of this Society were present at the meeting held recently. The room at the new quarters has been very comfortably fitted up, and great satisfaction was expressed with the arrangements. A magnificent display of Tulips was made by Mr. Moorhouse and Mr. Geo. Gill. Mr. J. Clark, M.A., Ph.D., Yorkshire College, delivered the inaugural lecture, his subject being "How our Wild Flowers Came to England." After a graphic description of the "clean sweep," of former vegetation and the geologic changes effected by the Ice Age in the British Isles, Mr. Clark showed that 1300 species of our wild flowers comprised relics of the Alpine plants, plants now to be found in the neighbourhood of the Mediterranean, and denizens of the West of Asia, while some few had been introduced from the New World. The most interesting were the alpine plants, and these were deteriorating and fast disappearing.

— **THE VALERIAN.**—I am pleased that my note (page 429) has drawn forth the remarks of your correspondent, "T. S., Henbury Hill." I will avail myself of his kind offer as regards the white variety of Valerian. He mentions his cultivated variety as being of a deeper red than any seen growing wild. I venture to think that the depth of colouring, dark red, cannot be surpassed on the embankment I alluded to, especially at the present time after the heavy rains. The other shade of colour is a deep pink. As growing the distinction is obvious, and the two shades add an element of fascination in contemplating the scene. I am also obliged to "J. R. S. C." for his information with respect to the white variety of Valerian, and the exact spots where it is found growing. I notice that the red Valerian is established in many small gardens, and to my mind it would make no mean ornament among a choice selection of hardy perennials in an herbaceous border. In Rochester Castle grounds it forms a prominent feature in some of the borders.—E. D. S.

— **THE PRICE OF POTATOES.**—The old adage that "It's an ill wind that blows naebody good" has been, says a writer in a daily contemporary, strikingly exemplified in the Potato trade this season. The severe weather in May effected an almost miraculous improvement in prices in local markets. Potatoes, which formerly realised from 25s. to 30s. per ton, were early in June eagerly competed for at from 80s. to 100s. on rail; but, unfortunately, only a very limited quantity remained to be disposed of. The lucky holders of these are, therefore, to be congratulated on their good fortune. The export trade is, of course, practically over for the season; but according to latest advices from America, quotations are still very satisfactory there, one cargo having recently been cleared out at from 2 15 dollars to 2 25 dollars per 168-lb. bag, and the probabilities are that prices may even advance slightly in consequence of the restricted nature of recent consignments. Nevertheless, it must be borne in mind that new Potatoes are now pouring into the Transatlantic markets from all directions, and these will, of course, soon usurp the position in public favour formerly held by the older varieties.

— LINNEAN SOCIETY.—We understand that at the recent annual meeting of this Society Mr. C. B. Clarke was elected President in the place of Professor Stewart. Professor Hæckel of Jena was awarded the Linnean medal.

— CAPE GRAPES.—According to a daily contemporary, a large supply of Cape Grapes may be expected this season. Two of the Donald Currie boats, it is reported, are being fitted with cold rooms for the carriage of fruit, and the Union Company is going to follow suit.

— GERANIUM IBERICUM.—This is very beautiful just now. We have grand masses behind a border of white Pinks 40 feet long, and the effect is most striking. I have forwarded a few sprays. We are completing bedding out fifty beds in a geometrical design on a terrace.—C.

— SENSATION STRAWBERRY.—Relative to the inquiry of "J. W. W." on page 462 last week, Messrs. Laxton Bros. send us heavily laden fruit trusses of this variety, and Mr. J. Smith of Mentmore informs us that two-year-old plants bear much better than one-year-old. The variety is with him a moderately good bearer, not shy.

— LIST OF NEW GARDEN PLANTS.—We have received a copy of Appendix II. of the "Kew Bulletin," which contains a list of new garden plants for the year 1893. A brief description accompanies each name, and references where illustrations of the plants have been published are given. It is a valuable list, and will be appreciated by many persons.

— THE CHINESE PINK.—According to "Meehans' Monthly" this Pink was first sent from China to Paris by missionaries in 1705. The double ones were first noted among seedlings in 1719 in Paris gardens. Of late years the improvement has been rapid, and to-day there are few more satisfactory or beautiful plants in garden borders than the improved China Pinks.

— STIGMAPHYLLON CILIATUM.—This is a charming climbing plant of easy culture, which should find a place in every warm house where creepers are grown. I noticed a plant trained under the roof of the Lily house in the Birmingham Botanical Gardens, and wondered why it was not more generally seen, for it is a graceful growing plant, resembling one of the smaller growing warm house Aristolochias, with opposite cordate leaves and a profusion of bright yellow Oncidium-like flowers. It is one of the many beautiful stove plants which are rarely seen and yet so valuable for decorative work in any way.—D.

— TEA-SEED OIL.—We learn from the "Chemist and Druggist" that "Some of the Ceylon Tea planters are making an organised attempt to obtain a sale for their Tea seed in the London market. A parcel of seven bags of that article was offered at the drug sales recently, but no one seemed to know what to do with it, and although the broker declared his belief that it was a favourite medicine in China the audience remained unmoved. Nevertheless, the Tea seed might have been worth purchasing for the sake of the bland oil which it contains, to the extent of about 30 per cent. by weight, and which resembles olive oil in colour, and somewhat in taste. The seeds are about the size of a large Cherry stone, and of a deep brown colour."

— NATIONAL DAHLIA SOCIETY.—We have received the report of this Society and schedule of the Exhibition which is to be held at the Crystal Palace on September 7th and 8th. We observe that the "Dahlia Analysis," as prepared for the *Journal of Horticulture* and published on March 22nd, 1894, is republished without acknowledgment—no doubt an accidental omission; and we have all the same pleasure in making known the desire of the Committee—namely, the object of the Society is to promote the cultivation, improvement, and exhibition of the Dahlia. There are three classes of annual subscriptions, the payment of either of which is sufficient to constitute membership. Members subscribing £1 are entitled to four tickets of admission to the Society's grand Exhibition; those subscribing 10s. to two tickets, and those subscribing 5s. to one ticket. In addition to the annual subscriptions there is also a prize fund, to which donations are earnestly solicited. Members alone have the privilege of competing for prizes at the Exhibitions of the National Dahlia Society. All members joining the Society for the first time this year will be entitled to a copy of the "Official Report of the Dahlia Conference, held at Chiswick, by the Royal Horticultural Society in 1890." Schedules and all information may be obtained from the Hon. Secretary, T. W. Girdlestone, M.A., F.L.S., Sunningdale, Berks.

— GARDENING APPOINTMENTS.—Mr. Charles Beckett, head gardener to T. H. Bryant, Esq., Juniper Hill, near Dorking, for the past thirteen years, has been appointed to a similar position to Sir William Pearce, Chilton Lodge, Hungerford, Berks, and will commence his duties there the first week in July. Mr. John Baxter, from Clyne Valley Nurseries, Swansea, has been appointed head gardener to C. G. Hill, Esq., Arnot Hill, Arnold, Nottingham.

— THE EFFECT OF THE RECENT FROST ON FRUIT TREES.—"Market Grower," whose note on page 457 of last week's issue set forth the effects of the recent frost on fruit trees in the Vale of Evesham, sends us a spray of Winham's Industry Gooseberry, the fruit of which has not been injured. Accompanying it were branches of Plum trees, the fruit, leaves and wood of these, however, presenting a scorched appearance. Serious damage has apparently been done to the fruit crop in that district.

— CEANOTHUS DENTATUS.—This Californian species is quite one of the best of the genus. It is of neat growth, flowers freely, and is perhaps the hardiest of all. When once established against a south wall it grows freely, and gives but little trouble in the regulation of its shoots. The rich blue flowers composed in roundish clusters are very showy. For covering a pillar supporting a verandah the neat growth of this Ceanothus renders it especially applicable for such a purpose.—E. M.

— ROYAL METEOROLOGICAL SOCIETY.—At the ordinary meeting of the Society, to be held, by kind permission of the Council of the Institution of Civil Engineers, at 25, Great George Street, Westminster, on Wednesday, the 20th instant, at 8 P.M., the following papers will be read:—"Fogs Reported with Strong Winds during the Fifteen Years, 1876-90, in the British Isles," by Robert H. Scott, M.A., F.R.S., "Some Characteristic Features of Gales and Strong Winds," by Richard H. Curtis, F.R.Met.Soc.—WILLIAM MARRIOTT, *Assistant Secretary*.

— CERCIDIPHYLLUM JAPONICUM.—A pistillate tree of Cercidiphyllum japonicum has produced flowers this year in Mr. John Robinson's garden in Salem, Massachusetts. The Cercidiphyllum, says the "Garden and Forest," which is the largest and most interesting tree of the forests of Japan, is proving itself admirably suited to flourish in the climate of the Northern States of America, where it may be planted with advantage much more frequently than it is at present. Its peculiar habit and the beauty of its curious foliage in early spring, during summer, and in autumn, when it turns bright yellow, will add interest and variety to our plantations.

— A HYBRID SPIRÆA.—An interesting hybrid of Spiræa Thunbergi with another hybrid has been called Spiræa arguta by Dr. H. Zabel of the Forest School at Münden, in Hanover. A plant received by the "Garden and Forest" from this establishment flowered profusely in the Arnold Arboretum, and was in finest bloom the first week in May. It promises to be a valuable addition to the earlier flowering kinds. The branches are slender and gracefully recurved, and are thickly covered with sessile umbels of flowers, as in S. Thunbergi; but the foliage is not so interesting, inasmuch as the leaves are shorter, broader, less abundant, and do not assume bright autumnal colours.

— SUMMARY OF METEOROLOGICAL OBSERVATIONS AT HODSOCK PRIORY, WORKSOP, NOTTS, FOR MAY.—Mean temperature of month, 48.4°. Maximum on the 25th, 65.6°; minimum on the 21st, 26.4°. Maximum in the sun on the 13th, 123.5°; minimum on the grass on the 21st, 18°. Mean temperature of air at 9 A.M., 50.4°; mean temperature of soil 1 foot deep, 50.9°. Nights below 32°—in shade four, on grass fifteen. Total sunshine in month 147 hours, or 30 per cent. of possible duration. We had four sunless days. Total rainfall, 1.34 inch. Rain fell on nineteen days. Average velocity of wind, 10.1 miles per hour. Velocity exceeded 400 miles on two days; fell short of 100 miles on four days. Approximate averages for May.—Mean temperature, 51.1°; sunshine, 174 hours; rainfall, 2.11 inches. Although both 1879 and 1885 were rather colder, both as to mean and extreme readings, we have to go back to 1864 (1st June) to find so much damage to vegetation. We always live in dread of spring frosts here, being rather low and damp; but the one this year has injured many plants I have not seen damaged before. My greatest trouble is the Roses; I fear many will not recover this season. Our promising Apple crop is gone, Strawberries and Raspberries are a sorry sight, and Gooseberries have fallen. Every Pea flower that was out is cut off. Our garden was very gay with herbaceous flowers, but not a single flower is left. Ferns, and in fact all young growths, are gone. Ash, Oak, Beech, Walnut, and young growths of Laurel and Box are all injured.—J. MALLENDER.

— CANNAS.—Mr. Cannell told me an interesting story the other day regarding one of the finest and most attractive of Cannas yet introduced, Queen Charlotte, which he flowers and shows so finely. The stock was obtained from a famous continental raiser, who showed an illustration of it simply recently at Antwerp, whereas Mr. Cannell showed bunches of the flowers, and these were so much more beautiful and brilliant than was the illustration that the exhibitor of the latter suffered in consequence. All the same he should later have reaped full advantage, because the living presentments showed conclusively how little for once an artist had been enabled to present a flower in all its native richness. After all the public prefer the living object when they propose to purchase, as that is at least truthful and reliable.—D.

— PAULOWNIA IMPERIALIS.—Considerable interest has been manifested in a tree of Paulownia imperialis at St. David's Station, says the "Devon and Exeter Gazette." It has borne a profusion of violet-purple blossoms, which appeared on the leafless tree and gave it a remarkable aspect. Another fine specimen stands at the end of Queen Street. The leaves are no less remarkable than the flowers, for they are exceptionally large. It is a pity there are not more of these trees about, for they are admirably adapted for town gardens, and they form a fine shade. The specimen at St. David's may have been planted as a memorial tree in connection with the formation of the Great Western Railway. Those who are familiar with Paris may remember the fine specimens of it on the north side of the Boulevard Bonne Nouvelle, where the large bushy heads give a cool umbrageous retreat to the promenaders who seek its shelter.

— EUCALYPTUS ROSTRATA.—The "Agricultural Gazette" of New South Wales gave recently an interesting account of the Murray Red Gum, Eucalyptus rostrata, saying the timber is of a rich red colour, darkening with age, close grained, durable, almost as hard as iron when thoroughly dry, of interlocked fibre, difficult to split, and when sawn will rend and twist if exposed to summer heat. It is largely used for paving blocks, street curbings, piles in damp ground, and in the construction of wharves and bridges, where it resists the attacks of marine borers and white ants. It is also admirable for railway sleepers, wheelwright work, engine buffers, and similar purposes. The tree grows to a height of 200 feet, with a diameter of from 4 to 6 feet, and even more. It requires a girth of from 3 feet 6 inches to 4 feet in thirty years. It is propagated from seed, which is now a regular article of commerce, and promises to be one of the most successful species of Eucalyptus in California. The exudation, or kino, of the Red Gum is a useful astringent, which has become a regular article of commerce, and is growing in favour with medical men in England, America, and Australia.

— THE SWANLEY HOME FOR FLOWERS.—Mr. Cannell was not at all unhappy in the selection of the above appellation for his Swanley nursery. It is, however, very hard to say anything new about it, and I shall not attempt to do so. But should anyone who has never been to Swanley rush to the conclusion that they have seen everything Mr. Cannell and his talented sons have to show, either at the Temple or the James Street Drill Hall, or at any other show, they are mistaken, and I can just now promise them a most delightful disillusioning if they will visit the nursery and see for themselves. We have thought we have seen grand displays of Begonias at the Temple; why they are not in it for a moment with the really grand show of those flowers now to be seen at Swanley. I could but exclaim, "It is magnificent!" and I am not subject to excessive rapture. There is one house, for instance, of fine plants, double on one side, single on the other, that is worth going a hundred miles to see, it is such a beautiful sight. What size! what colour! what form! But if the Begonias be brilliant, what is to be said for the Gloxinias? Not a thousand artists or pictures could do these justice. Here form, colours, markings, are of the finest conceivable. There may be as good elsewhere; there cannot well be better. Anything more charming than one long span-house of Gloxinias could hardly be conceived, and such splendid plants, too. Herbaceous Calceolarias have been a beautiful show, and large-flowered Pelargoniums are still rich. So also are the Zonals, double and single. There is one house of both sections the plants in which have been in bloom since the 1st of November last, and they are blooming now, making literally a mass of colour. What a glorious scarlet is the New Improved Raspail! It will be the finest variety for market work conceivable. The new single Madame Jules Chrétien, style of New Life, but a long way finer and better, is a beauty. However, those who want to see a singularly effective floral show just now should take a trip to Swanley.—A. D.

— RHODOTYPUS KERRIOIDES.—This pretty Japanese shrub is closely related to Kerria japonica, from which it differs by having more woody stems, larger foliage, and white flowers. The flowers are 1½ inch in diameter, resembling at first sight a small bloom of Rubus deliciosus, and are produced somewhat sparingly from the middle of April until the middle of June, the best show being given early in May. It is of easy cultivation, thriving well in a diversity of soils and situations, which makes it a welcome addition to the shrubbery.—D.

— SEEDLESS GRAPES.—It has been stated in a recent essay by a prominent horticulturist that seedless Grapes are produced by growing a plant from cuttings for several successive generations. The theory is that a plant becomes accustomed to this mode of propagation, and then the natural process of producing seeds becomes abortive by disuse. While those of wide experience may smile at this speculation, it is really one on which many scientific men differ. That there is no ground whatever for believing that seedless Grapes can be produced in this way is evident from the case of the Red Currant of our gardens. This has been continuously propagated by cuttings from the time when the Romans had sway in England; and yet, as it is well known, it produces seeds as freely to-day as if it had been raised continuously from seeds for a couple of thousand of years. Just how Nature does produce the seedless Grapes is not yet well known; and the honest answer to the question as to how seedless Grapes are produced would be to say that "we don't know."—"Meehans' Monthly."

SYRINGING "MALMAISON" CARNATIONS.

I AM pleased to see the discussion on stamping out the diseases which attack "Malmaisons" and other varieties of Carnations so much of late years is still continued, and it will, no doubt, be beneficial to many persons, seeing the comparatively few who grow them successfully. If such authorities as Mr. Bennet and Mr. Jennings were to give their method of treating the disease, they would be conferring a favour to those who may not have been as successful.

Mr. Bardney's note (page 448) is most opportune, for it has struck me, there being two forms of disease, the one may have been mistaken for the other; if so the remedy for the one would be the evil to the other, at least as far as my experience goes. I have been troubled both with helminthosporium and spot, and for the former I followed syringing with tepid water, thus washing the spores away, and stood the plants on ashes which were damped at least once a day. This had the effect of keeping the spores damp, consequently they were not distributed by the air, and I may say the plants present a much better appearance than they did last year.

The other disease, called spot, is, in my opinion, mildew in a severe form, or gangrene. This attacks Cloves badly as well, especially if the season be a dull wet one, and for this I tried precipitated copper carbonate; but I am not in a position to give an opinion as to its efficacy, as the lime used was stale and dead, but should this disease make its appearance this year I shall again try the vitriol. If we have remedies to combat the disease which hitherto has been so troublesome to Carnations it will greatly facilitate their culture, and make it a pleasure instead of bitter disappointment.—H. PROSSER, *The Knoll Gardens, Wimborne*.

SOME FINE RHODODENDRONS.

THE Rhododendron garden at the Birmingham Botanical Gardens has been a blaze of colour through May and June, many of the large old established plants of Blandyanum, John Waterer, Everestianum and others being very conspicuous. Amongst more recently introduced kinds the following which are now in bloom in these gardens are very fine and distinct varieties worthy of the attention. Sigismund Rucker, rosy crimson with a black spotted blotch; Kate Waterer, soft rosy pink with a large creamy white and spotted blotch, a charming and distinct variety; Martin H. Sutton, intense scarlet crimson with spotted blotch, rich colour and fine; Purity, white with cream spotted blotch, fine form and truss; Marchioness of Lansdowne, shaded lilac and red with a superb dark spotted blotch and extra fine truss; J. Marshall Brook, rosy crimson with light blotch and fine truss; Mrs. W. Agnew, blush margined with pale pink, slightly blotched, fine truss and quite distinct; W. E. Gladstone, bright beautifully shaded rose, slightly blotched, extra fine truss; Duchess of Bedford, crimson tinted rose with a light blotch, a striking variety of fine form and truss; Baron Schröder, delicate purple tinted rose with light cream and white spotted blotch, extra fine and distinct; Sappho, white, with a rich maroon densely spotted blotch. The young early growth of some kinds was killed by the recent severe frosts, and this is general throughout the midlands.

Adjoining the Rhododendron garden is the American plant garden, in which several large specimens of Ghent Azaleas are in full beauty, and in looking over them my mind was carried back fifty years ago and more when these fine old hardy plants were popular and so generally planted. The more gaudy Mollis varieties have now so much obscured the more modest beauty of the Ghent section, some of which, old glauca and viscosissima especially, were so deliciously scented.—W. D.



GREEN CHRYSANTHEMUMS.

IN the *Journal of Horticulture* (page 457) "C. H. P." says Florence Davis was probably the forerunner of the green varieties. This was not the first variety of recent years, as Lucrèce, introduced three or four years previous, is much greener. It is a Japanese of American origin, of first-class habit and form, and I believe was discarded by many growers on account of its "greenness."—A. B. C.

BUSH CHRYSANTHEMUMS IN SCOTLAND.

THOUGH the careful cultivator studies the wants and characteristics of his plants at all seasons, the success or otherwise of bush-grown Chrysanthemums depends largely on the kind of treatment they receive during the summer and autumn months. I have seen very good plants grown from poor cuttings, and weakly plants develop during the later months of summer into serviceable decorative specimens. The plants in most collections by this time have been placed in flowering pots. For my own part I am not particular to a week or two, but do not like the final potting to be delayed later than the second week in June.

The compost for Chrysanthemums is a matter of little moment; I grow them hardly two years in the same kind of soil. Given a good loam, there is no fear of the plants not succeeding. Of late years I have employed a compost of a more open nature than I formerly used. The soil at my command is deficient in fibre, therefore the potting is done less firmly than is generally the case. I am also careful not to overwater at any time, but on the contrary incline rather to limit the supply of water to as little as the plants require. I have tried standing the pots on a hard gravel bottom, but prefer a modified method of plunging the pots. The smaller are lowered two-thirds, while the larger are plunged a little more than half their depth. My experience points to this being the best kind of treatment. I do not find that the plants to any extent root through into the plunging material. No doubt a system of lavish onpouring of water tends to cause downward rooting, just as careful watering checks any such tendency. I, however, have the plants lifted at least twice during the autumn; and thus any roots that may have wandered downwards are broken off before the plants depend upon them for support. The system of leaving at the time of potting an extra inch or two below the rim of the pot unfilled with soil, in addition to other advantages, has yet this other that fresh material added to the surface tends to keep the roots inside the pot.

I think the most important matter of all in the culture of plants for the production of blooms for decorative purposes is the allowance of a due proportion of light and air. Plants and shoots crowded together render nugatory the best treatment in other respects. It is, indeed, the one point where so many fail, and the reason for bush grown plants so largely producing undeveloped flowers. When the collection is being set in its summer position the first thing to be considered is, therefore, the space each plant will require for growth. I have occasionally placed them closer together than I knew was necessary, intending to draw out a certain proportion and allow all more space when the growths began to crowd. This plan is good, provided it is carried out; but it sometimes happens that work is delayed, and the process of "drawing out" is left to stand over until irreparable damage has resulted. On this account I find it better to give each plant full space from the beginning. It matters less for the earlier flowering varieties to be a little too close for a time, as the period they are housed before flowering is short; consequently the loss of foliage is not much in that time. In the case of late flowering sorts, however, the result is disastrous. It is impossible to keep foliage in good condition till Christmas, on till the middle or end of January, unless the shoots and leaves have been produced under the best conditions attainable in our climate. The final result is, of course, poor undeveloped flowers.

In addition to standing the plants sufficiently far apart to allow for maturation, it is of equal importance to stake out the shoots in such a manner as to secure to them a full amount of light. Young gardeners like to see newly staked plants well proportioned. In this case the end in view necessitates the placing of the stakes at such an angle as will leave the plant quite open in the centre, the shoots being tied out like an inverted umbrella half opened. Some varieties during the summer produce so many side shoots that if all were left to grow the benefit of this method of staking would be lost and the energies of the plants frittered away on the production of a number of small blooms. The point to observe with these is to leave just as many shoots as will have room to grow and the plant capable of sustaining. A small, well-developed bloom, it must be remembered, is quite as beautiful as a monster, but it must be well filled, and the plant has a limit when the power of doing this degenerates into the production of masses of undeveloped florets, which by courtesy we term flowers.

The feeding of Chrysanthemums during the summer and autumn is a point requiring judgment. It is bad policy to allow the foliage to yellow and decrease in size. At the same time it is unsafe to employ

stimulating manures largely. The perfect way is that which watches the changes which appear. A slight application of sulphate of ammonia may do wonders in reviving the energies of an exhausted plant, but it is also to be remembered that an overdose of the same may completely ruin it. Slight surface dressings of a rich compost are very beneficial, and these in general are sufficient to keep the plant in a robust, healthy condition. Early in September is a period when such a dressing is generally applied. Again about the middle of October or a little later another supply is afforded.

When large bush-grown plants are first housed it may occur that the change from a cool moist atmosphere out of doors to a dry airy structure seriously affects the plants. This is, in fact, the time when foliage suffers so much, and when it either withers or mildews. The out-of-door course of treatment has, of course, an effect which predisposes the plant in its behaviour when placed indoors. But under the best treatment the plants cannot be expected to bear up unaffected by this change unless care is taken to lessen the difference. In some cases an extra supply of water may be all that is needed, but with houses on which the sun exerts a powerful effect it may be necessary and wise to shade the plants for a few days. Directly new roots are seen forming on the surface of the soil it may be hoped that the plants are safe, and the foliage under ordinary good treatment able to carry on the late sorts for many weeks. A little sulphate of ammonia is often of much benefit shortly after the plants have been placed inside.—R. P. BROTHERSTON.

CHRYSANTHEMUMS ON WALLS.

KNOWING the value of well managed plants out of doors to give useful blooms when the bulk of the ordinary grown plants under glass are over, and having a spare wall with a southern aspect at disposal, I have annually rearranged the varieties with a view to thoroughly testing their capabilities for out of door growth. I find the old stools, or roots that have flowered in pots for one year are preferable to plants that are raised from cuttings the same year, for the reason that they are better furnished with branches near the base. Where the wall is low it is possible to have it covered completely with foliage from the base to the summit, and over three parts of it with blossom in the autumn. This is obtained by a judicious selection of sections and varieties. For instance, the taller growing Japanese kinds, like Sunflower and Edwin Molyneux, cover the higher part of a wall 7 feet, the lower half being occupied with Japanese like M. Bernard and Val d'Andorre, with varieties of Pompons intermixed.

I find the results depend on the methods of culture. For instance, where the plants are provided with good soil, of a reasonable depth and well attended to in the matter of water being supplied to the roots, especially during such a dry summer as that experienced last year, they produce excellent results. Contrast these well managed plants with those that are neglected, and it will quickly be seen that the latter method cannot be the means of encouraging any extension of this form of Chrysanthemum culture. Good culture induces robust growth of both leaf and branch, which means considerable multiplication of shoots and correspondingly more flowers. No matter how well any particular variety may succeed it is not wise to allow the same plants to remain too long without renewal. Some of my plants had until last year occupied the site for the last eight years, but they had sadly deteriorated in the quality and number of their flowers. Therefore in February of 1893 a new plantation was made, removing the old soil and replacing it with fresh compost, which was largely composed of roadside refuse, to which was freely added freshly gathered leaves. The hot dry weather of last summer necessitated a liberal application of manure, which was largely minimised by ample mulchings of partly decayed manure, as owing to the full southern aspect the soil quickly became dry. I prefer to put out the old plants in February or March rather than directly they have finished flowering in pots.

With a view of suggesting to others the pleasure, irrespective of the utility, derived from wall Chrysanthemums, I append a brief list of sorts that are suitable to this form of culture. Those belonging to the incurved section are the worst form of flowers to encourage, others having reflexed florets are the best; the natural imbrication of this section is one means of resisting damp. The drier the blooms can be kept the less damage frost will do them. It must be understood that I am now dealing with plants receiving no protection at any time beyond what a wall affords. Mrs. Horril is a fine reflexed sport from the incurved George Glenny, having the characteristics of that variety in all respects except formation of flower. This is quite one of the best sorts to grow. The four varieties—golden, pink, peach, and white—of the Christine family are excellent, and so is Distinction and Emperor of China, both belonging to the reflexed type. Amongst Japanese one of the best is Edwin Molyneux; one plant of this fills a space 4 feet in diameter, and has been smothered with blossoms. Sunflower is one of the best of rich yellows. Peter the Great provides a lighter tinted variety in that colour. Val d'Andorre gives us bronzy coloured blossoms. Source d'Or cannot be excelled in this respect, however; and Amaranth is surpassed by M. Bernard. Etoile de Lyon gives the latest opening blossoms, much paler than generally seen on well grown plants under glass.

Single flowered varieties I appreciate here as well as elsewhere; they are so well adapted to this form of culture. Useful varieties include Mrs. Langtry, pink, small blooms, but deliciously perfumed; Bessie Conway, white, purple stripes; Golden Star, rich golden yellow, and White Perfection, which gives us bunches of well formed flowers on

stout stalks, and is quite one of the best in any section. Lady Churchill, terra cotta; Jane, pure white, twisted petals; Mrs. D. B. Crane, cerise pink; Effie, deep crimson, large and early are also good.

Pompons are freely employed, they cover the lower part of the wall so well and flower in such profusion. Prince of Orange, bronze yellow; Sœur Melaine, which opens its pure white blossoms early and in abundance; Black Douglas, an excellent companion to the latter in point of colour, dark crimson; President, maroon coloured flowers on stout footstalks; Mdle. Elise Dordan, muslin rose, excellent in every respect; Golden Circle and St. Michael, yellow, are excellent kinds. Snowdrop and its sport, Primrose League, as the names imply, give us useful coloured flowers in abundance.—E. MOLYNEUX.

STEPHEN'S GREEN, DUBLIN.

STEPHEN'S GREEN is centrally situated in the southern portion of the city of Dublin, bisected by the River Liffey. Formerly as a square enjoyed only by the privileged few, it was in 1880 opened to the citizens

cissi and the gay Dutch bulbs in assorted colours and varieties brighten up the beds in spring, to be afterwards replaced by the élite of summer bedders. Each season finds Mr. Kearney to the front with new designs for his carpet beds; in fact, his "carpets" cannot be beaten, nor are they shaken by comparison with any similar work on this side of the Channel. Very evident also is his taste for hardy plants, though the proximity of a forest of chimney pots is not, nor does it appear to be favourable to some of the choicer plants in this class, yet the long border near his house is eagerly scanned by amateurs, and a great advantage is the legibly written labels, that "he who runs may read" and learn likewise. A stretch of greensward in one part does not bear the legend "Please keep off the grass," and here "Young Ireland," represented by many of the waifs and strays of a city, enjoy the pleasures of "the turf," whilst their elders find accommodation on the numerous seats, which are liberally provided.

The principal trees and shrubs are mostly deciduous, Thorns pre-



FIG. 77.—VIEW IN STEPHEN'S GREEN, DUBLIN.

by the munificence of Lord Ardilaun, to whom the public are indebted for the transformation converting it into a splendid piece of art gardening. The lake (fig. 77) is a prominent feature, gracefully outlined and admirably planned, peeps from different points give one the idea of a larger extent than really obtains. The waterfall, over which the supply comes tumbling, is a fine specimen of rockwork building, and might be taken for Nature pure and simple if the buildings in the background could be concealed from view. Waterfowl in great variety are the usual never-ending source of interest to visitors. Many rare species would require an ornithologist to describe them. Mr. Kearney, the Superintendent, says they come from the Arctic to the Antarctic regions, a brief but comprehensive description.

In the centre of the 24 acres comprising the Green is an old equestrian statue of His Majesty Georgius Secundus who long presided here, ere it was invaded by the landscape gardener's art. Dating from the good old days of 1758, a passing thought lends the idea that horses have, too, changed with the times, and that the particular breed, a specimen of which the King is caracoling on, is now extinct. The beautiful bronze statue of Lord Ardilaun in a quiet nook facing the College of Surgeons, erected in 1892, is by its dignity and repose a pleasing *objet d'art*.

Good examples of bedding are always noticeable in the Green. Nar-

dominating. Evergreens have not received that consideration in the planting their merits deserve, consequently the winter aspect shows a weak point not observable during the leafage of summer. The same want is felt more or less in other squares and grounds of the city; possibly the situation is not one of choice for planting evergreens in variety, though in no place would they by their cheerful tone have a happier effect. Hollies attain the rudest health in Dublin surroundings. The grounds of Lord Iveagh's residence in the immediate neighbourhood are adorned with many fine examples, amongst which the Hodgins' variety is conspicuous in shapely specimens of this bold dark-hued Holly. Thorns have in times long past entered largely in the planting of Dublin and its environs; most of these in the Green, I believe, date their birth long prior to its conversion. Charming as they are when in flower, the pleasure is of but brief duration. Perchance the prominence given to them in "Auld Lang Syne" had some connection with the historic weapon—ye Blackthorn.

But few of the thousands who daily visit this popular resort come in a spirit of criticism. Quiet enjoyment and respectful observance of the "Tables of the Law," erected at the chief entrances, characterise all sorts and conditions of folk who patronise the artistically planned and scrupulously well-kept grounds.—E. K., Dublin.

THE POSITION AND PROSPECTS OF GARDENERS.

SUCH is the abridged title of a paper that was read by Mr. H. Elliott, F.R.H.S., at a meeting of the Bournemouth and District Gardeners' Association on March 6th of the present year, and now published in pamphlet form.* We propose making a sufficient citation from the paper to enable our gardening friends to appreciate its character, and it will no doubt induce some of them to read the whole pamphlet. Most of these, too, we suspect, will be satisfied with their small investment.

"I am pretty well acquainted with the troubles and trials of a gardener's every-day practice, and I know something of its pleasures and advantages; for there can be no denying that the surroundings of a gardener's life are often very pleasant. Nature in her most charming aspect—assisted by Art—is ever open to his full and free enjoyment; and the wealthiest nobleman in the land, spending thousands a year on his garden, can enjoy no more of the pleasures of it than the man who daily tends and waters it for a weekly wage.

"These pleasant surroundings of a gardener are probably the chief cause of the over-crowded state of our ranks. All sorts and conditions of men covet the pleasures of a gardener's life, and try to obtain them, without taking the trouble to learn the important duties, or of preparing themselves for the responsibilities belonging thereto, and finding the profession an open one, guarded by no educational test, requiring no outlay or certificate (except a mere introductory letter of respectability), the 'halt, the lame, and the blind,' so to say—the outcast, the refuse of every trade and profession, swoop down upon it, and not only defraud those who may be unfortunate enough to engage them, but injure the reputation of the whole profession by their failures. Moreover, they crowd out, by their unjust competition, the best, most competent, and promising men from our ranks, many of whom throw up their profession in disgust, having discovered that if they possess education and science enough to make a competent gardener, it will pay them better to employ these in some other line.

"I could give many examples from my own experience of most competent and promising young men thus leaving the business, and of others, who having failed in everything else they attempted, at last became gardeners, and equally failing as such, still remained like parasites in the profession.

"The great problem we have to consider is how to reverse this state of things, how to keep the good men, and keep out the bad, how to protect ourselves and employers of gardeners as well against these incompetent interlopers who have done and are doing so much to disgrace the profession.

"Let us here consider for a moment how vast and important is the interest at stake. First, the importance to the community at large of the work carried on by gardeners in the production of fruit and vegetables as food for the people. In comparison with the farmer the area of land cultivated may be small, but the produce of the land per acre, in quantity and value, is enormously in favour of the gardener. The importance of gardening, as I have said, is very great to the whole community. It is specially important to the owners of the land, as the gardener is found to pay a much higher rent than the farmer can do. The operations of the gardener are also of great importance to all who dwell in thickly populated districts, where the land is very valuable, and the gardens are consequently small, and it is only by the exercise of great forethought, skill, and industry that a supply of fruit and vegetables can be produced sufficient for the needs of the family.

"Nevertheless I would not have you think that I underrate the importance of the ornamental department; yet I should like to particularly impress on the minds of young gardeners the paramount importance of the study of fruit and vegetable culture. Young men are often far too anxious to go into the plant houses, the ornamental department, where after they have learnt the names of a few exotics, which they cannot remember, they consider themselves full-blown ornamental gardeners. This is a great mistake. Of course a man who wishes to make himself a proficient all-round gardener has much to learn. If I were to mention all the subjects I have at one time or another seen recommended as necessary for a gardener to learn to complete his education, it would be found that life was not long enough to acquire them.

"We may take it as a general rule that he must understand fruit and vegetable culture, and the culture of stove and greenhouse plants, hardy plants and Orchids, early and late forcing, and all other modes of cultivation ever invented or heard of. He must understand the

elements of chemistry, botany, geology, geometrical and freehand drawing, book-keeping, and mensuration. He must be sober, industrious, obedient, regular in his habits, humble and meek, have a good temper, and be very polite at all times, especially to the cook, and withal be without incumbrance.

"Let the perfect man be found embodying all these accomplishments, what is his social position as a head gardener? A domestic servant, so says the law, and, like a domestic, if summarily discharged from his employment without cause he is entitled to a month's wages! And there is scarcely one menial duty he may not be called upon to perform, except—well—to milk a cow! A County Court Judge has quite recently decided that a head gardener cannot be reasonably called upon to milk a cow, unless he had specially engaged to do so; and having been dismissed without notice for refusing to milk the said cow, the judge awarded him a month's wages. Now, it is something to be thankful for to know that a head gardener, who understands horticulture in all its branches, botany, and chemistry, cannot be reasonably expected to milk a cow.

"Now, is it not absurd—is it not to our eternal disgrace—that the oldest profession in the world, numbering in its ranks hundreds of thousands, carrying on a work of the utmost importance to the community, a class of men, taking them as a whole—even when we include the worthless—of very high respectability, and though they may not all command an unlimited acquaintance with the arts and sciences, possess some amount of natural and acquired intelligence, that its members should be ranked, in the eyes of the law, amongst the 'hewers of wood and drawers of water;' that many of them work far more hours and receive less pay than an unskilled labourer in the building trade? Is it not, I say, absurd that gardeners have no society or bond of union amongst themselves—no organisation worthy of the name to watch over them and protect their interests?

"Trade unionism and strikes are unworthy of our adoption; these are but clumsy and unsatisfactory methods for the mechanic or the unskilled workman, and altogether beneath our consideration. But there are not wanting better examples of societies for us to follow; in fact, all trades and professions have their special societies. A few years since the plumbers established an organisation by which they formed local boards or committees, to hold examinations in certain districts, and they granted certificates to such members of their trade who proved themselves practically efficient in their work. The Royal College of Veterinary Surgeons have inaugurated a system throughout the country of granting certificates of farriery to what are commonly called 'shoeing smiths,' who could prove themselves entitled to them. This is a proper attempt to organise and make the trade more efficient, and I have no doubt but that it will become, in course of a few years, an offence punishable by law for a man to lame your horse, unless he held a certificate of competency to do so. I believe not very many years ago anyone could set up as a chemist and druggist, sell poisons, and mix potions without any special qualifications! But this state of things was unsatisfactory and dangerous to the public, so the Royal Pharmaceutical Society took the matter up, obtained the necessary powers from Parliament to regulate the profession, which it did, to its manifest advantage and the safety of the public.

"I might go on enumerating societies without end. All trades and professions have them, and whenever and wherever they have been properly worked they have proved of great advantage, alike to their members and to the public. The most successful of these organisations have chiefly concerned themselves in guarding their professions against unqualified and dishonourable members, and in raising the standard of education and professional qualifications of those admitted.

"Of many of these societies we know little and hear less, except of their respective members dining together. Having done their work so well in the past, they have not much to do now but dine together. Even this is a very important matter. I wish gardeners would oftener dine together. A man generally feels very generous and kind towards himself and his neighbours after a good dinner, and if we could only get gardeners to dine together pretty often there would be great hopes for improvement.

"Now I know you want to hear what remedy I have to offer for the ills I have mentioned in relation to our profession.

"The first is union. The second an improved education.

"Gardeners throughout the country must form themselves into one Society, having its headquarters in London, and Local Committees all over the country, wherever sufficient numbers can be found to form them.

"The Central Council would be elected by the members from the Local Committees. The Council would make and publish rules for the

* Messrs. Pardy & Son, The Triangle, Bournemouth, price 3d., post free.

guidance of the committees all over the country. These rules would regulate the preliminary education and examination of all young gardeners, and the granting of certificates of proficiency to those who earned them. All persons now holding situations as head gardeners should be granted a certificate for a small fee on joining the Society without an examination.

"A certain period—say two or three years—should be allowed for these gardeners to register themselves and take up their certificates, after which stated time no more certificates would be awarded, except to those who could prove their proficiency before a practical Board of Examiners, appointed by the Society through its Council.

"Some plan of this sort, if energetically carried out, would in the course of a very few years work a great peaceful revolution, beneficial alike to the employer and to the gardener."

RIDDINGS COURT.

TRAVELLERS speak with rapture of the grandeur of Scottish mountain scenery; the splendour of the rugged Derbyshire heights; the beauty of the Windermere, but they appear to forget that much nearer London, in Surrey in fact, there is scenery which is altogether delightful. Here stretch fertile valleys, abodes of men and animals, where crops flourish and the air is pure; there are high hills clothed with trees, and perchance a church tower or steeple showing among them, crowning the height, and appearing at it were landmarks of the peace which reigns over all. If the Londoner wishes for a glimpse of rural life in its true simplicity, of mountains reaching high up in the air, of valleys deep and beautiful, he need not go so far as Derbyshire or Scotland, but to Surrey; here he will find them all. Such at any rate was the verdict of a Londoner as on a recent day in May he travelled as far as Caterham Valley. The day was damp and close, but the cheery "Good morning" from Mr. C. Papworth, the able gardener at Riddings Court, the residence of Jeremiah Lyon, Esq., went far to dispel the effects of the weather. A walk through the village or town, always uphill, for ten minutes and we are at our destination.

Though not a large place it is well kept, and despite the disadvantages which most accrue to a garden with only about 12 inches of soil overlying chalk, is finely cropped. It is almost old-fashioned in its simplicity, and perhaps the more interesting on this account, for margins of old-time flowers border the vegetable quarters and lend an air of charm and sweetness which is now so seldom found in gardens. The flowers look well, the vegetables are healthy and green, the Apple and Pear trees are carrying large crops of fruits, all proving the presence of a man who understands his work and therefore glories in it, for who understanding the art of gardening can fail to like it and find new interest in his plants every day? Certainly not Mr. Papworth, for as we walk he points with pardonable pride to a row of bush Apples, all looking healthy and clean. But no, not quite all, for here we find one on which Mr. May Frost has left his mark in the blackened tips and destitution of fruits. There were numbers before the visitation, but none now—a bitter disappointment truly to a man after hours of labour and tender care. But Mr. Papworth is inclined to be philosophical, and consoles himself with the knowledge that if he cannot have fruit from one tree he can from fifty others—a comforting reflection beyond a doubt, and one which would lead many to philosophise at much length.

Bright masses of *Papaver orientale* emphasise the rich green of Peas and Beans, and are utilised occasionally as cut flowers. The plants are old ones, and so produce numbers of flowers. A bed of Pansies containing an exceptionally large assortment of colours is very beautiful. The plants are self-sown seedlings, and appear to revel in the chalky soil, though they are usually credited with a predilection for a medium of a far stronger nature. It is interesting and at the same time instructive to try to trace the parentage of many of the flowers on which the assiduous energy of the bees has left its mark. The seedlings grow literally by thousands, and form strong shoots, and large, healthy leafage.

The singular strength of growth seen in fruit, vegetables and flowers led to the query as to how it was obtained on such a poor rooting medium. It is the result of thorough tillage and enrichment combined with heavy mulching with stable manure, and abundant drenchings during the growing period with liquid from a large cesspool. All the fruit trees are planted very high, and the roots kept on the surface by these constant mulchings and good growth is, as it must be, the gratifying result. Without these dressings it would be impossible to procure satisfactory crops year after year, and the garden is an excellent example of what may be done when the rooting medium is not all that could be desired. Mr. Papworth said he read all the gardening literature he could, and then put into practice what was applicable to the case, and where he could not give or do all that was directed, he went as near as he possibly could, and had no reason to be dissatisfied with the results which he had achieved.

We go a little further and come to a wall facing north-west, and on which some of the cleanest cordons one could wish to see are growing. They represent some of the best varieties of Apples, Pears and Plums, and as the frost scarcely touched them are bearing such numbers of fruits as will necessitate somewhat extensive thinning. On the border under this wall Dwarf French Beans were just through the ground when the frost came, and now not a single one remains; they were cut off as cleanly as it was possible to be done. However, the loss will not be

extensive, as seeds were immediately sown in pots which, after care in hardening, would be planted, and tender pods will be had almost as early as if none had been destroyed. With Potatoes the results will be more disastrous, as one cannot sow a few seeds and remedy the evil in such a prompt and easy manner. One quarter of early varieties, all earthed up and promising well, was completely destroyed, and is the sort of mishap that requires more philosophy than is usually found in a man to bear without a murmur.

The crop of Gooseberries, Currants, Raspberries, and Strawberries is extraordinary, especially in the case of the first named. Last year the wood ripened perfectly, and now with the berries not half grown the branches are weighted down. Currants have been thinned somewhat by the frost, but Raspberries and Strawberries remain uninjured. A line of espalier Pear and Apple trees had a somewhat severe turn; in the case of one tree of Blenheim Orange every fruit was cleared off, and the others, though they have not suffered to such an extent, the crops have been very materially lightened. That frost has very much to answer for.

The flower garden and lawn are small in extent but clean and bright, beds in the former being charming with Forget-me-nots and Wallflowers, which latter, though past their best beauty, still diffused their pleasing fragrance. The borders here, as in other parts of the garden, have clumps of hardy perennials planted, and will in the summer afford an abundance of bright flowers for cutting purposes. The lawn is terraced, and the turf is in admirable condition, while at the edges a Mulberry tree may be seen with here and there a purple Beech, the leaves of which were of the highest brilliance, the colouration being superb.

Let us now glance in the greenhouses, bright with flowers of various kinds and hues. On the roof of one is a grand *Maréchal Niel*, bearing numbers of deliciously scented flowers and bright green leaves free from a suspicion of green fly. *Pelargoniums* are well represented by Fancy and Zonal varieties. Of the former Purity was the best, and thoroughly worthy of its name, being of the purest white. The Zonals must, however, be accorded the highest position, for the display was rich in colour, size of pip and truss. The plants were stout and strong in growth, and evidently the secret of a successful method of treatment is well known to Mr. Papworth. Amongst so many excellent kinds it is difficult to make a selection, but half a dozen were noted as being the best, and they were Hector, Proserpine, Condé, Rosy Morn, Lord Rosebery and Beauty of Windsor. Orchids, too, are fairly well represented so far as numbers go, admirably if we take quality as the standpoint from which to judge. Robust health is portrayed in every leaf and flower amongst the *Odontoglossums*, *Oncidiums*, *Cypripediums*, *Cattleyas* and *Lælias* that are grown. Palms of the size of such great utility in the embellishment of rooms, halls, and corridors, are seen in large numbers, while Maidenhair Ferns grown in the full sun are models, and will furnish fronds hard and green for many months to come. Here and there we see a brightly coloured *Gloxinia*, and while tuberous rooted *Begonias* assist with their grand foliage and promise of abundance of flowers, in adding diversity and interest to the collection of plants grown under glass.

A word or two about the *Chrysanthemums*, which at present look as though they would go far to sustain their grower's reputation as an exhibitor. Like all else, they are done well, incessant attention is devoted to them, and for it *Chrysanthemums*, or any other plants, will eventually amply repay. Queens, Rundles, Avalanches, Edwin Molyneux, and scores of others were remarkable alike for their stout growth and the large substantial leafage with which the stems were clothed to their base.

During the day we took a walk over the hills, reaching at one time a height of upwards of 750 feet, and the panorama, with the sun glinting on a stream winding through the valleys for miles, was such an one as to remain impressed on the mind, and accentuate the impression, previously recorded, that in Surrey, equally with other places more difficult of access, is to be found some as magnificent scenery as one could wish to see; at any rate, it gladdened the eyes and heart of—A LONDONER.

AUSTRALIAN APPLES IN THE ENGLISH MARKET.

MR. L. M. SHOBRIDGE, a Tasmanian orchardist, who has lately returned from a trip to England, has been unburdening himself to the "Argus" of his opinions on the Australian fruit export trade, and these opinions do not present the prospect for fruit growers in a very rosy light. He is convinced that both ocean freights and the cost of production locally must be very greatly cheapened if the trade is to become permanent and profitable. The Australian season (in which we presume he includes the Tasmanian and New Zealand season) is a short one of eight or nine weeks, American Apples cutting in at one end and early French small fruits at the other.

Mr. Shobridge has nothing but admiration for the manner in which the French market their fruit, which is sold at Covent Garden with all the bloom on it. He thinks Tasmania's only chance is with Apples, but that Victoria may eventually find her best trade in Grapes. Australian Apples would do well enough in England if they could be sold retail for 3d. or 3½d. per lb., but freight and the other expenses of picking, packing and cases bring the cost of a 40 lb. case up to 7s. 6d., and as the retail price for fruit in London is 50 per cent higher than the wholesale price, the thing apparently can't be done as to give any profit. Fancy Apples in small lots will fetch good prices in the West End, but the demand is easily satisfied. Small parcels always bring the best prices,

and the Apples should be hard fleshed and sappy, with a slightly acid flavour. The idea that in order to find a market an Apple must be highly coloured is apparently a mistake, as Mr. Shoobridge said that last year yellow Apples such as Newtown Pippins were realising better prices than Pearmain. In any case as soon as an Apple became common people wanted a change, though they disliked experimenting with new sorts unless they were in small lots.

Mr. Shoobridge summed up the difficulties in the path of the Australian grower as being the necessity of selling so far below the retail price for a big trade and the heavy freights, and with regard to the latter he said the shipping companies held out very little hope of a reduction. They said, in effect, that if the fruit exporters wanted to displace meat, which was a handy cargo, at 80s. per ton, they would have to pay 90s. per ton, space being taken by measurement, and pointed out that if they went to the expense of providing a large insulated space for the fruit trade, it would only be occupied part of the year. "The only hope I can see at present," said Mr. Shoobridge, "is that the colonies may come together and couple the mail contracts with a regular fresh food service, in which a large space will be guaranteed at minimum rates, as suggested by the last Postal Conference. If we are to get any reasonable share of the British markets we must work together. . . . The sooner we have intercolonial free trade the better for our reputation outside. Just now we are a laughing stock." He did not think anything could be done with Pears, as they were so easily damaged, and even in the case of Apples he said they had not had a single shipment that was not injured to some extent.

The American competition was a serious matter in connection with the dried fruit trade. While in London he saw splendid Apricots in 2 lbs. tins selling at 5s. 6d. a dozen, and he did not think Australians could compete against that sort of thing. The result of his visit was that he thought Australia might safely go on, as at present, sending small choice parcels for a special trade; but for the Australian grower to properly compete with his rival in a large trade he must have production on a large and cheap scale. It must be remembered that the above expressions are only the opinions of one man, who possibly has no knowledge of the New Zealand trade. In spite of his rather gloomy view of the business, the fact remains that New Zealand growers have made some fairly successful shipments to London. It does not seem reasonable to expect that freights can be reduced much lower; but with proper attention to details, such as care in sending only good fruit and proper packing, there seems to be no reason why Apple growing for the English market should not be a profitable adjunct to the ordinary lines of farming in New Zealand. As to the dried and tinned fruit trade, before Australia and New Zealand attempt to compete with America in the London market, they should try what they can do at home. There is an enormous quantity of American tinned fruit sold in Australia, and one of the most hopeful signs for the future would be to see this replaced by the native-grown article.—("Christchurch Press.")

SOUTHERN PINK SOCIETY.

JUNE 12TH.

THE first Exhibition of this Society was held in the Drill Hall, James Street, Westminster, and cannot, owing to the bad weather which has been experienced of late all over the country, be termed a great success. The general complaint was that the Show was too early, and only two exhibitors, Mr. Richard Dean and Mr. B. Ladhams, sent flowers. The prizes mentioned in the schedules will be offered again for laced Pinks at the Drill Hall on the 26th inst., on which date it is expected that a much larger number of growers will be able to exhibit blooms.

The first prize for twelve bunches of border Pinks was taken by Mr. B. Ladhams, Shirley, Southampton, with Queen of the South (first-class certificate) Ernest Ladhams, Percy, Mrs. Sinkins, Lizzie Duval, Paddington, and Little Kate, amongst others. Mr. Richard Dean, Ranelagh Road, Ealing, was a good second. For six bunches of border Pinks, distinct, the prizes were placed as in the previously named class, this again being the case in the class for the best bunch of any white Pink.

Each of these exhibitors sent a varied collection, Mr. Ladhams being deservedly awarded an extra prize for his contribution.

PANSY AND VIOLA SHOW.

JUNE 12TH.

THE second annual Show of the London Pansy and Violet Society was held in the Drill Hall, Westminster, on Tuesday last, and was a marked improvement on that of last year. According to experts' opinion finer Pansies have never been staged in such large numbers in London. The colouration was bright and clear, and the form and substance of the flowers left little or nothing to be desired. Amongst the Violas the improvement was not so marked, but, considering the unfavourableness of the weather during the last month the display was a good one. The arrangements of the Show were excellent, and reflect the highest credit on Mr. McLeod, the honorary secretary, and the committee.

The gold medal for a collection of Pansies and Violas was accorded to Mr. Septimus Pye, Catterall, Garstang, Lancs., for a splendid exhibit. The Violas were not perhaps up to the highest standard, and the arrangement was not so good as it might have been, the staging being too high to allow the top flowers to be seen. There were a number of new varieties of merit. Noticeable were Blue Garter, Christiania (a

new variety raised by Dr. Stewart, and almost pure white), Border Witch, Lutelia, and Mary Scott. Amongst the Pansies Tamworth Gem, Miss Stirling, B. Doulton, W. G. Pye, David Rennie, Andrew Frater, Mary Kay, Maggie MacPhail, Miss Patterson, and Mrs. Carrigan were good of the Fancies; and Willie Cook, Mrs. Wilson, R. M. Wenley, Jessie Thomson, Mary Mitchell, and Alfred West being the best in the Show section.

In the class for forty-eight Fancy Pansies, in distinct varieties, Mr. M. Campbell, High Blantyre, N.B., was deservedly placed first. The flowers were large, clean, and of much substance, and comprised John Allan, Jeanie P. Tate, David Rennie, Agnes Mabel, Maggie Wilson, D. Morrison, Lady Duff, Lord Hamilton, George Anderson, My Lady, Jas. S. Irvine, Mrs. G. P. Addie, Dr. Bostock, Helen Christie, Mrs. Wm. Watson, A. H. Murray, John Taylor, Mrs. C. L. Carnegie, Mrs. Robt. Thomson, Mrs. Mackie, Mrs. G. C. Scarce, Mrs. J. McCannell, Andrew Frater, Archibald Buchanan, Wm. Adam, Jessie Ford, Mrs. L. Morten, Annie Ross, Miss Paterson, Mrs. T. Ritchie, Alex. Ollar, Jas. MacNish, Jas. Campbell, Mrs. Grossart, Princess, John Findlay, W. B. Smellie, Marmion, Mrs. M. Cuthbertson, Miss Hudson, Mr. R. S. Cocker, Wm. Caldwell, Col. Stirling, Alex. Smith, and several seedlings. Mr. John Smellie, Busby, N.B., the only other competitor in this class, was placed second with a very creditable stand, consisting of blooms of great size, but somewhat lacking in finish and substance.

Mr. Andrew Irvine, Tighnabruach, N.B., was a good first for twenty-four Fancy Pansies, distinct, staging Andrew Eaton, Mrs. Spence, W. A. Clark, Mrs. Sherrard, Mr. J. D. Dewar, Annie Rose, John Knox, John Allan, Thos. Fraser, D. Morris, Agnes Mabel, Mr. T. Ritchie, Mr. J. Russell, Dora Dean, Miss Morton, B. Doulton, and some seedlings in superb form, the colouration being splendid. Mr. J. Smellie was second with a charming stand, including amongst others H. W. Clarke, Marmion, John Knox, Maggie Watson, Arthur Eaton, Jas. Campbell, and Annie Ross. The third prize in this class went to Messrs. W. Paul & Co., Bridge of Weir, N.B.

There were four entries in the class for twelve distinct Fancy Pansies, the premier prize going to Mr. A. Irvine with Mrs. J. Young, H. W. Clarke, Mrs. Spencer, Miss Morton, Andrew Frater, Agnes Mabel, John Allen, Donald Morris, J. Russell, Mrs. Smith, and two seedlings, all in splendid condition. Mr. J. Smellie was a good second with D. Rennie, Maggie Watson, Mrs. John Smellie, Andrew Frater, and Wm. Watson as the best. Mr. M. Campbell was a fairly good third.

With a dozen grand examples of Mrs. Wm. Watson, Mr. J. Smellie was first for twelve Fancy Pansies, one variety; Mr. M. Campbell being second with John Allan, and Mr. Andrew Irvine third with Clara Burn. For twelve distinct unnamed seedling Fancy Pansies, Mr. A. Irvine was first with handsome flowers; Mr. Smellie second also with good flowers, and Messrs. Wm. Paul & Son third.

Mr. Andrew Irvine was first for twelve Show Pansies, staging very beautiful blooms, which unfortunately were not named; Mr. M. Campbell was second, and Mr. J. Smellie third.

For twenty-four sprays of Violas, distinct, each to comprise nine blooms, Messrs. J. Cheal & Sons, Lowfield Nurseries, Crawley, Sussex, were first with splendid blooms. The varieties represented were Duchess of Sutherland, Trentham Purple, Delicata (new), Rosine, Annie King (new), Black Prince, Goldfinch, Joy, Ardwell Gem, Blue Cloud, Earl of Beaconsfield, Duchess of Fife, Countess of Kintore, Josephine (new), Crimson King, William Neil, Bloomer, Peter Barr, Blue Bell, Lord Elcho, Peter Barr, Seedling, Max Kolle, Profusion, and Princess May. Mr. J. Smellie was second with a good collection; and Miss Kate Hopkins, Mere Cottage, Knutsford, with a weak stand. Messrs. Cheal and Sons were the only competitors for twelve sprays of Violas, distinct, and were awarded the first prize with Duchess of Sutherland, Trentham Purple, Countess of Kintore, Crimson King, Annie King, Goldfinch, Evelyn, Ardwell Gem, Princess May, Profusion, Max Kolle, and a dark form of Annie King.

The first prize was not accorded for six sprays of rayless Violas of the "Sylvia type," the second going to Mr. J. Smellie. For six rayless Violas of the Violetta type Mr. J. Smellie was again placed second, the first prize not being accorded.

The prize given by the President of the Society for a group of six plants of Violas was taken by Mr. A. J. Rowberry, South Woodford, Essex, who showed William Neil, Sylvia, Cottage Maid, Ardwell Gem, Lemon Queen, and Duchess of Fife, each specimen being very fine and well grown. The competition in amateurs' classes was keen, and some flowers of high merit were staged by the numerous competitors. Space will permit of a brief list of prizewinners only being given, and these are appended below. For twelve Fancy Pansies, distinct, Mr. W. Penson, High Street, Newport, Salop, was first, and was the only exhibitor. For six Fancy Pansies, distinct, there were four competitors, Mr. H. A. Needs, Woking, being first; Mr. A. J. Rowberry, second; and Mr. Bruce Cook, Chingford, third. For twelve Fancy Pansies, one variety, Mr. A. J. Rowberry was first with charming blooms of David Wilson, and was the only competitor. Mr. W. Penson was first for six Fancy Pansies, one variety.

Mr. A. J. Rowberry was first for twelve sprays of Violas with beautiful examples. For six sprays six blooms each, Mr. H. A. Needs was first, and Mr. W. Beeching, Warren Road, Chingford second. For six sprays of Violas, three blooms in each, Mr. W. Fuller, Kelvedon, was first; Mr. E. R. Smith, Muswell Hill, second; and Mr. B. Cook, third.

In the class for six sprays of Violas, three light and three dark varieties, Mr. A. J. Rowberry was first; Mr. B. Cook second, and Mr. W. Beeching third. For six sprays of rayless Violas of the Sylvia type,

Mr. A. J. Rowberry was first, as also was he in the class for six sprays of rayless varieties of the Violetta section.

Mr. D. B. Crane staged a stand of Violas not for competition, as also did Mr. S. Pye and Messrs. W. Paul & Co. sent a splendid collection of Pansies. The prize for the best Pansy in the Show was awarded to Mr. M. Campbell with an almost faultless example of John Allan.

BONGARDIA RAUWOLFI.

THIS berberidaceous plant is a native of Greece, Syria, Persia, Afghanistan, and south to Scind. Its specific name is after Rauwolf, who as long ago as 1573 called attention to it as the true Chrysogonum of Dioscorides. Its synonyms are *B. chrysogonium* and *B. Olivieri*. It is not at all like a Berberry in habit, resembling much more strongly in the golden yellow of its flowers and the general appearance of the inflorescence a meadow Buttercup. This resemblance is carried to the point of mimicry in presence of a gland or honey pit at the base of each petal. The leaves and flower stems spring from the upper part of the tuber-like underground rootstock, which in Persia has economic uses, being boiled or roasted as articles of food. The pinnately divided leaves, which in their turn are used as a salad, spring in a graceful arching rosette on all sides of the flower peduncles. Some are pinnate, in others the lower or basal pinnae are each divided to the base into two, giving the aspect of whorls of leaflets round the common petiole. The flower stalks are slightly branched, the petals variable in number, with the stamens opposite and equal in number to the petals. The graceful habit and clear bright colour should make this an acceptable addition to rockery and border collections. The illustration (fig. 78) has been prepared from a sketch of a plant growing in the Royal Gardens, Kew.

AN INSECT SNAPPER—WHAT NEXT?

I SEND herewith an "insect snapper," an invention I have lately patented, and a description of which will doubtless interest many of your readers. It is for catching such insects as cockroaches, wasps, bees, moths, spiders, and meat flies, and comprises a box about 5 inches by 1½ inch by 1¼ inch, with a door hinged at one end of the box, and closed by a spring. It has a handle about a foot long, and the door is opened by pulling with the forefinger a wire trigger on a rod, one end of which rod slides on the handle, the other end being attached to the door.

To catch an insect crawling on the floor, wall, or window-pane, the snapper is held in one hand by the handle, the forefinger pulling back the trigger, which opens the door; the snapper is then placed flat on the surface, on which the insect is crawling, and slid forward until the insect is in the space between the door and the box, when the trigger being released the door closes, sweeping the insect into the box. Cockroaches thus caught may be dropped into a fire, into water, or otherwise disposed of, thus avoiding the unsightly features connected with killing them on the wall, floor, or carpet of a room. Wasps and bees when crawling, say on a window-pane, may be caught without risk and turned out of doors, or if preferred the closed box can be held in the hand and shaken smartly until the enclosed insect is so stunned that it may be dropped out without danger and killed. A small brush attached to the outside of the box is to sweep an insect out of a corner.

In catching cockroaches the snapper has proved thoroughly efficient, and bee-keepers who are annoyed by their bees coming into sitting-rooms will find this a handy way of turning them out of doors uninjured. The snapper is not yet on the market, but I expect shortly to place it before the public.—W. O. SHEPPARD.

[Our printer's devil has done no work since the snapper came to hand, but has spent his time in brushing spiders out of corners and searching for flies on the walls, to indulge in the pleasure of snapping them up.]

ROYAL HORTICULTURAL SOCIETY.

JUNE 12TH.

As was generally expected the Drill Hall, James Street, S.W., presented a bright appearance on this occasion, the large building being well filled. Greenhouse and hardy flowers were extensively exhibited, the same also applying to Orchids. In conjunction with this meeting the London Pansy and the Southern Pink Societies held their respective Exhibitions, reports of which are published elsewhere in this issue.

FRUIT COMMITTEE.—Present: P. Crowley, Esq. (in the chair); with Rev. W. Wilks, Dr. Hogg, and Messrs. John Lee, T. F. Rivers, G. Bunyard, Harrison Weir, J. Cheal, G. Taber, J. T. Saltmarsh, C. Ross, G. Sage, J. Hudson, A. Dean, H. Balderson, F. Q. Lane, J. Smith, G. Norman, and E. Gilman.

Evidence was not wanting of the beginning of the Melon season, and having in mind the experience of last year, some members of the Committee appeared to nerve themselves for the effort of tasting and grinning or turning up their noses. Such an ordeal they were not called upon to undergo on the present occasion, as only about one fruit out of ten was decidedly "nasty," while nine out of ten were so last

season. Their condition was attributed mainly to the excessive heat, and the consequent lack of nourishment. This year the want of sun no doubt affected the Melons, as most of them were a little watery, but on the whole the fruits were much better than those of last year—a practical lesson on the evils of the "drying and roasting system" that is too often practised when opportunity affords in Melon culture.

The first Melons placed on the table last Tuesday were handsome fruits from Mr. S. Mortimer, Rowledge, a new variety named *Empress*, parentage Eclipse and Imperial Green Flesh. Fruit, large, oval, and well netted, flesh green, thick, juicy, but a little watery and well flavoured.



FIG. 78.—BONGARDIA RAUWOLFI.

An award of merit was granted, and a desire expressed to see the variety again, when the fruits might be expected to ripen under more favourable climatic conditions.

Mr. A. Bishop, gardener to R. Burrell, Esq., Westley Hall, Bury St. Edmunds, sent a very large wall-netted Melon, the result of a cross between High Cross Hybrid and Westley Hall, the flesh a mixture of green and scarlet, very juicy and sweet, and it was thought the flavour would be better if the fruits were ripened under better conditions. The specimen was not by any means ripe to the rind, and a desire was expressed to see this promising variety again.

Mr. G. Wythes sent a small fruit of a new Melon from Beauty of Syon and Hero of Isleworth, very sweet and pleasant. The same may be said about a new Melon named Lord Howard, exhibited by Mr. B.

Ashton, The Gardens, Glossop Hall. Possibly larger fruits may be grown, those sent were too small, and would be almost "lost" on a good sized dessert table. Very small Melons must possess the highest possible quality to win honours, now there are so many of good size and excellent flavour.

Mr. J. Bradley, Tilehurst Nurseries, near Reading, sent fruits of his new Tomato, the result of a cross between Conference and Perfection. Early fruits, he said, had realised 1s. 6d. per lb. Those exhibited were undoubtedly the right size for market and well coloured. Recommended to be grown at Chiswick. Mr. F. Mitchell, Farncombe, Godalming, sent fruits and fruiting plants of a new Tomato, Mitchell's Hybrid; very fine fruits freely produced. The variety is the result of a cross between Trophy and Challenger, and is a strong grower. Recommended to be tried at Chiswick.

Mr. E. Beckett, The Gardens, Aldenham House, Elstree, sent splendid fruits of Lord Napier Nectarine, also excellent samples of Reading Perfection Tomato, and a cultural commendation was unanimously awarded. A bronze medal was suggested, and would probably have been granted, had not several members regarded the "cultural commendation" a greater honour than the lowest form of medal. The medal is appropriate enough for cottagers' produce, but not for such evidence of cultural skill as was displayed in the production of such splendid Nectarines.

Mr. A. Dean, Kingston, placed a bulb of Cook's "Long Keeper" Onion, which he had kept from a dish exhibited a month or two ago, with a view of testing its keeping properties. It was as firm as an Onion could be, and Mr. Dean was advised to take his Onion back from whence it came (he could not hang it by the neck, for it had none), and bring it again in a month or two's time. It was, of course, not shown for an award, but as worth inspection (vote of thanks).

Mr. F. Buss, The Cottage, Brook Croft, Walthamstow, sent examples of expanding Strawberry protector. This is simply a circular strand of wire supported by three wire legs for pressing in the ground for the Strawberries to hang over the hoop and off the ground, as in the old wire guards; but this is looped in places, and the hook can be fixed where desired for gripping plants of various sizes. Some of the Committee thought the appliance might be made useful for supporting various hardy border plants.

Mr. J. P. Kitchen, Hampton, sent a fasciated growth of Asparagus, flattened and contorted in a remarkable manner. It was relegated to "another place"—to wit, the Scientific Committee.

Mr. G. Wythes exhibited excellent dishes of Chelsea Gem and Duke of Albany Peas, also close pure white heads of Walcheren and Veitch's Pearl Cauliflowers, and a cultural commendation was unanimously awarded. Mr. Miller sent half a dozen Melons, but as the Committee presumed the fruits could not be cut (perhaps they had had enough Melon) it was felt they could "do nothing with them," and so the consignment was passed, the Committee proceeding to the order of the day—luncheon.

FLORAL COMMITTEE.—Present: W. Marshall, Esq. (in the chair); Messrs. J. Fraser, Owen Thomas, J. Laing, H. Herbst, H. B. May, C. T. Druery, G. Stevens, C. J. Salter, C. F. Bause, J. Jennings, W. Furze, G. Nicholson, J. D. Pawle, H. Cannell, T. Godfrey, E. Beckett, H. Selfe Leonard, H. J. Jones, C. E. Shea, E. Mawley, C. Noble, J. T. Bennett Pöe, H. Turner, G. Paul, and Rev. H. H. D'Ombraim.

Messrs. H. Cannell & Sons, Swanley, Kent, sent a large and beautiful collection of Gloxinias and Tuberous Begonias. The former were remarkable for their brilliancy of colour, size of flower, and floriferousness. Particularly fine were Viceroy, Snowdrift, Roi des Rouges, Miss Cannell, and Evatina. What has been said in regard to the Gloxinias applies to the Begonias. The plants were well grown and profusely flowered. Amongst the most conspicuous varieties were Clara Butt, Colossus, Miss Frances Willard, General Owen Williams, P. H. Calderon, Lady Whitehead, and Miss Thompson. Messrs. Cannell also had blooms of Queen Charlotte Canna (silver-gilt Flora medal). Messrs. Kelway and Sons, Langport, Somerset, contributed cut blooms of Pæonies, double and single Pyrethrums, Cannas, Amaryllises, and Delphiniums. The latter were very fine, and made a strong contrast to the other flowers. Acme, Alfred Henderson, Sir Trevor Lawrence, and Minneapolis were noted as being exceptionally good double Delphiniums. The Pæonies included such grand varieties as Duchess of York, J. C. Vaughan, Duchess of Hesse, Mrs. Pinnery, and Princess Alix (silver-gilt medal). Several awards of merit were adjudged Messrs. Cannell and Kelway respectively for new varieties of flowers, descriptions of which are given elsewhere.

Mr. T. S. Ware, Hale Farm Nurseries, Tottenham, staged a large collection of hardy flowers, amongst which were Papaver orientalis, Irises in variety, Lilium colchicum, Delphiniums, Lychnises, with Carnations Duchess of Fife (award of merit) and Lady Wantage. The former is a charming bluish pink variety, and the latter a fine white Carnation, both Clove scented (silver Banksian medal). Messrs. Paul and Son, The Old Nurseries, Cheshunt, also had hardy flowers in variety, fresh and beautiful, likewise staging the Hybrid Tea Rose Madame Pernet Ducher, and a splendid Canna named M. Jargeot (silver Banksian medal). Messrs. J. Cheal & Sons, Crawley, sent flowers of double and single Pyrethrums, effectively arrayed in sprays, also blooms of other hardy plants (bronze Banksian medal). Messrs. J. Laing & Sons, Forest Hill, had a few choice Tuberous Begonias, including Rosette, Duchess of Northumberland and Duke of Wellington, with Gloxinia Perfection. These are described below. Mr. Anthony Waterer, Knap Hill, Nursery, was represented by boxes of cut Rhododendrons, remark-

able for their variety of colour. The flowers were beautiful and much admired by visitors (silver Flora medal). For a collection of six single and six double Pyrethrums Mr. W. Salmon, Ivy Cottage, Elder Road, West Norwood, was awarded the first prize, there being, apparently, no other competitor.

Messrs. Barr & Sons, Long Ditton, sent a collection of hardy flowers, the majority of these being Irises, Pyrethrums, Pæonies and Pinks (silver Banksian medal). Some new rustic flower stands were shown by Mr. J. Prewett, Lancaster Street, Bayswater; and Messrs. Kimberley and Son, Stoke Nursery, Coventry, had a box of tricolor Pelargonium Brilliant, a very distinct variety. Messrs. G. Jackman & Sons, Woking, had a small tree of Fagus rotundifolia, a small-leaved kind, for which a first-class certificate was awarded.

Roses were shown in excellent condition by Mr. G. Prince, Oxford, who had magnificent blooms of Princess of Wales, Rubens, Hon. Edith Gifford, Madame Lambard, and Maréchal Niel (silver Banksian medal). Mr. H. B. May, Upper Edmonton, sent some new Carnations, including Duke of York and Primrose Day, for which awards of merit were adjudged. These plants are described elsewhere in this issue. Mr. May also had a group of choice Ferns, and amongst these were Gymnogramma Alstoni, Pteris nobilis variegata, Asplenium nobilis, and Lygodium dichotomum polydactylon, for which a first-class certificate was awarded (silver Flora medal). Mr. G. May, The Nurseries, King's Road, Upper Teddington, arranged a group of the now well-known and useful Carnation Uriah Pike, the plants being well flowered. Pelargoniums were grandly shown by Mr. H. J. Jones, Ryecroft Nurseries, Lewisham. The plants were well grown and covered with blooms. Amongst other varieties Scarlet Gem, Sir Trevor Lawrence, Rose Queen, Dark Chinese, and Duke of Fife (award of merit) were especially good.

Hardy flowering trees and shrubs were sent in great variety from the Royal Gardens, Kew, this contribution adding interest to the meeting. Buddleia globosa, Rosa macrophylla, R. rugosa and varieties, Lonicera media, Magnolia obovata, Genista virgata, Ceanothus papillosus, Robinia hispida, and others were very fine. Messrs. W. Paul & Sons, Waltham Cross, staged a splendid collection of cut Rhododendrons, comprising sixty varieties, amongst these being Helen Waterer, John Spenser, Chilo, and Mrs. F. Hankey. About sixty-five sorts of flowering and foliage trees and shrubs, with blooms of a handsome Rose named Lorna Doone were likewise shown by the same firm (silver Banksian medal). Dr. Hogg, Beechlands, Sussex, contributed branches of a distinct crimson-fruited Sycamore, which attracted the notice of many visitors, and received an award of merit.

Messrs. J. Veitch & Sons, Chelsea, were awarded first-class certificates for Sarracenia Willisi and Pteris ludens, both of which are described elsewhere. J. T. Bennett Poë, Esq., had a group of miscellaneous plants, including Impatiens Hawkeri, Alströmia peregrina alba, and Diplacus glutinosus coccinea (silver Banksian medal). Martin R. Smith, Esq., Hayes, Kent, sent a group of the beautiful "Malmaison" Carnations Princess May and Mrs. Everard Hambro, for which an award of merit was adjudged (silver Banksian medal). Mr. W. Whiteley, Hillingdon, had a group of Carnation Germania and some plants of Strobilanthes Dyerianus. Mr. B. Ladhams, Shirley, Southampton, had a collection of hardy flowers (bronze Flora medal), and Mr. A. Farrini, Forest Hill, a group of tuberous Begonias. W. Graham Vivian, Esq., exhibited cut branches of flowering shrubs, for which a silver Banksian medal was recommended. Models of the travelling horticultural buildings were exhibited. Mr. C. Ross, Welford Park Gardens, had some fine seedling Cactus blooms.

ORCHID COMMITTEE.—Present: H. J. Veitch, Esq. (in the chair); Dr. Masters, Messrs. De B. Crawshay, H. M. Pollett, H. Ballantine, H. J. Chapman, W. H. White, J. Gabriel, E. Hill, T. W. Bond, J. Douglas, S. Courtauld, W. H. Protheroe, and T. Statler.

Orchids were well represented, there being some very choice species and varieties amongst those exhibited. Messrs. F. Sander & Co. exhibited a small but interesting collection, including the beautiful Phaius Owenianus, figured in the *Journal of Horticulture* last week. This secured the prize for the best seedling Orchid. Epidendrum alatum, Pescatorea Lehmanni superba, Cattleya Mossiae Mr. R. J. Measures, Lælio-Cattleya Wellsiana, Dendrobium Guiberti, and a number of plants of the beautiful Oncidium lanceanum were also interesting. W. Thompson, Esq., Walton Grange, Stone, sent some distinct and beautiful Odontoglossums, including O. sceptrum leopardinum and O. Wilckeanum grandis, for which awards of merit were accorded. MM. Lindau, Brussels, had plants of Lælia purpurata var. princeps, Aërides Reginæ, Bifrenaria tyrianthina (award of merit), Lælio-Cattleya Valvattori. De B. Crawshay, Esq., Sevenoaks, sent a group of Odontoglossums and Cattleyas. The former included O. crispum Miss Florence M. Bovill, and O. citrosum, Rosefield variety, and awards of merit were adjudged for them (silver Flora medal). Major Joicey, Sunningdale Park, Ascot, contributed some well grown plants of Miltonia vexillaria (cultural commendation), and a specimen of Anguloa Clowesi (first-class certificate). A silver Banksian medal was recommended for the group. Messrs. Hugh Low & Co. had a small group of Cypripediums and Cattleyas.

Messrs. W. L. Lewis & Co., Southgate, arranged an effective group of Cattleya Mossiae, Lælia purpurata, and Cypripediums in variety (silver Banksian medal). The finest contribution of Orchids, however, came from R. J. Measures Esq., Cambridge Lodge, Camberwell, who had a beautiful group of Miltonia vexillaria in variety, with Cattleyas and Cypripediums (silver Flora medal). Messrs. J. Veitch & Sons, Royal Exotic Nursery, Chelsea, sent some choice Orchids and other

plants. The Orchids comprised *Disa* × *langleyensis*, *Masdevallia* × *glaphyrantha*, *M. asmodia*, and *M. parlatoreana*, awards of merit being adjudged for the three *Masdevallias*. Baron Schröder, The Dell, Egham, secured first-class certificates for *Odontoglossum crispum* Baron Schröder, and *O. c. grandis maculata*, with an award of merit for *O. crispum* var. *mirabile*.

T. Statler, Esq., Stand Hall, Manchester, sent a plant of *Cypripedium Sargentianum* (botanical certificate), and F. Wigan, Esq., Clare Lawn, East Sheen, gained an award of merit for *Dendrobium veratrifolium*. A first-class certificate was awarded for *Cattleya Mossiae alba*, Pitt's variety, shown by T. Pitt, Esq., Stoke Newington. Sir Trevor Lawrence, Bart., sent an interesting group, and secured a first-class certificate for *Aërides maculosum* var. *Schröderi*, with several botanical certificates for curious Orchids of various types.

CERTIFICATES AND AWARDS OF MERIT.

Anguloa Clowesi (Major Joicey).—A fine plant of this was exhibited and the large rich yellow flowers were conspicuous amongst the dark green foliage (first-class certificate).

Aërides maculosum Schröderi (Sir Trevor Lawrence, Bart.).—A charming form with bright rosy magenta flowers borne in long racemes (first-class certificate).

Arisæma fimbriata (Sir Trevor Lawrence).—A more curious than beautiful plant. The leaves are rich green, and the spathe dark brown veined green (first-class certificate).

Begonia Rosette (J. Laing & Sons).—A double variety with neat red flowers of medium size (award of merit).

Begonia Earl of Craven (J. Laing & Sons).—A splendid double variety, the flowers being large, of good form, and dark red in colour (award of merit).

Begonia Duchesse of Northumberland (J. Laing & Sons).—A magnificent double Tuberous Begonia. The flowers are large and of a rich salmon pink shade (award of merit).

Begonia Colossus (H. Cannell & Sons).—A very large single flower of a deep salmon pink shade (award of merit).

Begonia Rev. T. G. Little (H. Cannell & Sons).—A dark red double variety, the flowers being neat, and of excellent shape (award of merit).

Begonia Miss Thompson (H. Cannell & Sons).—This is a charming double pink variety, the flowers being of good form (award of merit).

Begonia Miss Falconer (H. Cannell & Sons).—A double yellow variety of merit. The flowers are large and richly coloured (award of merit).

Begonia Mary Cornell (H. Cannell & Sons).—A splendid variety with large double salmon pink blooms (award of merit).

Bifrenaria tyrianthina (M. Linden).—This is a comparatively old species, but it is not often exhibited. The flowers are of a dull rosy purple, striped with a darker colour in the throat (award of merit).

Browallia speciosa major (F. Sander & Co.).—The flowers of this variety are purplish blue, and more than an inch in diameter (award of merit).

Carnation Mrs. Everard Hambro (M. R. Smith).—This is a splendid seedling of the "Malmaison" type. The flowers are massive in form, and dark red in colour (award of merit).

Carnation Duchess of Fife (T. S. Ware).—A beautiful clove-scented variety, the flowers being large and of a blush pink shade (award of merit).

Carnation Primrose Day (H. B. May).—A grand flower, the flowers of good form and bright yellow colour (award of merit).

Carnation Duke of York (H. B. May).—A dark coloured variety of a moderate size (award of merit).

Carnation Duchess of Devonshire (G. Fry).—A salmon blush flower of good size and excellent form (award of merit).

Cattleya Mossiae Mrs. R. J. Measures (F. Sander & Co.).—The sepals and petals of this form are blush coloured, as is the margin of the lip, the centre of the latter being purplish crimson (award of merit).

Cattleya Mossiae alba, Pitt's variety (T. Pitt).—The flowers of this variety are white, with the exception of some orange yellow in the throat (first-class certificate).

Dendrobium veratrifolium (F. Wigan).—A charming species with small flowers. The sepals and petals are white, the lip being pale violet (award of merit).

Dendrobium Guberti (F. Sander & Co.).—A beautiful species with rich yellow flowers, which are borne in drooping racemes (first-class certificate).

Delphinium Alfred Henderson (Kelway & Son).—A fine dark blue variety, the flowers having a white centre (award of merit).

Fagus rotundifolia (G. Jackman & Son).—A small-leaved Beech of merit. The plant shown was 8 or 10 feet high, and the foliage dark green in colour (first-class certificate).

Gloxinia Ladas (H. Cannell & Sons).—A very fine variety, with large flowers of a velvety crimson shade, spotted and margined white (award of merit).

Iris variegata Prince of Orange (Barr & Son).—This is an attractive variety. The standards are rich yellow, while the falls are mixed with yellow and brown (award of merit).

Lygodium dichotomum polydactylon (H. B. May).—This appears to be an improvement on the type, and is a useful climbing Fern (first-class certificate).

Masdevallia parlatoreana (J. Veitch & Son).—This is the result of a cross between *M. Veitchiana* and *M. Barlaeana*. The flowers are orange red suffused purple (award of merit).

Masdevallia asmodia (J. Veitch & Son).—A cross between *M. Normani* and *M. chelsoni*. A dull red flush purple (award of merit).

Masdevallia glaphyrantha (J. Veitch & Son).—The result of a cross between *M. Barlaeana* and *M. infracta*; small flowers of a purplish red colour (award of merit).

Odontoglossum Wilckeanum grandis (W. Thompson).—A very fine form, with yellow flowers spotted chocolate (award of merit).

Odontoglossum sceptrum aureum (W. Thompson).—The sepals and petals of this form are rich yellow, as is the lip, the whole flower being blotched with brown (award of merit).

Odontoglossum sceptrum leopoldianum (W. Thompson).—This is a richly spotted form, and the flowers are above medium size (award of merit).

Odontoglossum crispum Miss Florence M. Bovill (De B. Crawshaw).—A purplish suffusion in the sepals and petals characterises this form, which is most attractive (award of merit).

Odontoglossum citrosum, Rosefield variety (De B. Crawshaw).—This is a beautiful variety, the flowers being produced in long racemes; the sepals and petals are cream, and the lip pale mauve (award of merit).

Odontoglossum crispum mirabile (Baron Schröder).—A distinct form with flowers well spotted with dark brown (award of merit).

Odontoglossum crispum grandis maculatum (Baron Schröder).—A splendid variety, the flowers being unusually large, faintly suffused with purple and spotted dark brown (first-class certificate).

Odontoglossum crispum Baroness Schröder (Baron Schröder).—A beautiful and most distinct form. The sepals and petals are for the most part dark brownish red, with a white margin (first-class certificate).

Osmunda javanica (J. Veitch & Sons).—An attractive Fern with fronds about 18 inches in length, and of a rich green shade (first-class certificate).

Pæony Mr. Manning (Kelway & Son).—A very dark double variety, with medium-sized flowers (award of merit).

Pelargonium Duchess of Fife (H. J. Jones).—An attractive semi-double fancy Pelargonium. The flowers are white and bright rosy crimson (award of merit).

Pteris ludens (J. Veitch & Sons).—A distinct Fern with broad pale green fronds (first-class certificate).

Pyrethrum Alfred Henderson (Kelway & Son).—A variety with large double dark crimson flowers (award of merit).

Sarracenia Willisi (J. Veitch & Sons).—This is the result of a cross between *S. melanorhoda* and *S. Courti*. The colour of the leaf is green veined dark red (first-class certificate).

Sycamore, Crimson Fruited (Dr. Hogg).—This is a seedling raised by the exhibitor, and the branches shown were cut from a tree about 25 feet high. The fruit is rich crimson, and being profusely borne, presents a beautiful appearance (award of merit).

FLOWERING TREES AND SHRUBS.

The afternoon meeting at the Drill Hall, when Mr. G. Nicholson, Royal Gardens, Kew, read a paper on the above subject, was very largely attended, the company listening with the greatest attention. Mr. J. T. Bennett-Poë occupied the chair.

The essayist in opening said that to give the subject proper attention would require a very much greater length of time than was allowed him, and he should therefore mention only those which were the most beautiful, useful, and best worthy of a place in gardens. Several trees and shrubs, he said, were deserving of far more attention than was accorded to them, and it would be his endeavour to place only such before his listeners. Mr. Nicholson then proceeded to read his paper, in which numerous little known plants were named and illustrated with illustrations, plates, and dried specimens, many of which had been gathered by the essayist in his travels.

Different species and varieties of Magnolias, Berberises, Azaras, Camellias, Skimmias, Ceanothus, Æsculus, Genistas, and many others were described and shown, and brief reference made to their hardiness and suitability for cultivation on walls or in the open ground, all being dealt with in an exceedingly interesting and instructive manner.

At the conclusion a vote of thanks was deservedly accorded to Mr. G. Nicholson for his paper, and to Mr. J. T. Bennett Poë for so kindly occupying the chair.



FRUIT FORCING.

Pines.—*Fruit Ripening.*—Though syringing the plants must cease when the fruit commences colouring, the supply of water at the roots should be continued as before when necessary, and to improve the quality and colour of the fruit ventilate liberally, but do not allow the temperature to fall below 80° in the daytime, gradually diminishing the moisture in the house, and maintaining a night temperature of 70° to 75°. Plants of Queens, Enville, and Providence started last February will ripen fruit this month, whilst Smooth Cayenne and Charlotte Rothschild will require about a month longer to finish properly. Under the same

conditions they furnish a good successional supply of fruit, which may be still further extended by removing some of the fruiting plants to a cool airy place after the fruit is sufficiently advanced in ripening. The bottom heat should be maintained at 80° to 90°, those being the extreme points, but the more regular the heat at the roots the better.

Successional Plants.—The weather is not yet such as to safely dispense with artificial heat, but fires will not be required much longer, as the sun heat, by the assistance obtained from the heated beds in which the plants are plunged, rarely allows the atmospheric temperature to fall below 65°, which is more suitable for the satisfactory development of the plants than a higher temperature from fire heat. As recently potted plants make growth quickly, strict attention should be given to ventilation to prevent an attenuated growth, therefore admit air at 75° to 80°, increasing it until 85° is reached, and above that ventilate fully, diminishing in the afternoon, closing the house at a temperature of 80°. Afford a light sprinkling daily in the afternoon when bright weather prevails.

Starting Suckers.—From those on the early fruiting plants a sufficient number should be selected to meet the demand, and if started at once, the plants resulting will be suitable for fruiting from this time onwards another season, and prove supplementary to those started in March, their requirements being identical, only shading must be more effectual.

Figs.—Early-forced Trees.—Generous treatment will be needed after the first crops are gathered to enable the trees to swell the second crop. Syringe twice a day to keep red spider in check, employing an insecticide if necessary, but not such as will discolour the fruit, which is easily done by any corrosive substance, and frequently by rubbing with the hand. Afford liquid manure when watering is necessary, trees in pots requiring it daily, sometimes twice a day, and trees in borders once or twice a week, according to the extent of the rooting area. The second crop should be thinned before the fruit is the size of Walnuts, and in thinning reserve the largest at the base of the shoots. Top-dress trees in pots with rich material, supplying a little chemical manure occasionally; planted-out trees mulch with short, sweet, lumpy, partially decayed manure about an inch thick, and renew from time to time so as to maintain that thickness.

Succession Houses.—When the fruit commences to ripen a free circulation of air must be afforded, and it should be warm, as cold air-moisture settles on the fruit and may cause decay or result in "spot." Attend to tying-in and regulating the shoots by thinning and stopping, so as to afford the fruit the benefit of all the light practicable. The moisture in the atmosphere will need to be moderated, not wetting the fruit, though if red spider attack the trees the fruit should be gathered rather closely and a good syringing given, which will not injure the remaining fruit, provided it is done early on a fine day, so that the moisture does not remain long on them. Do not allow any lack of water at the roots, yet guard against excessive moisture in the soil by affording lessened supplies than when the fruits were swelling.

Young Trees in Pots.—Those for next year's early forcing must not be neglected in any cultural essential or disappointment will be the consequence. They must have all the light possible and be kept as near the glass as practicable without touching, so as to secure sturdy well-ripened growth, keeping them clean by syringing and the application of an insecticide if necessary, and affording liquid manure to effect a stout growth. Suckers must be removed. When the growth is completed the trees may be stood outdoors in a sunny place to induce rest, but the wood must be well ripened previously, and the sooner the better for early forcing. If any fruit shows it should be removed. This will not prejudice but favour the formation of bud-Figs in embryo for producing the first and most valuable crop another season.

Vines.—Late Grapes.—These must be thinned immediately they are large enough, the berries swelling so rapidly at this season that they soon become too large to be thinned properly and expeditiously, besides, when the work is deferred too long the size of the fruit is impaired. The laterals must not be allowed to extend so as to interfere with the principal foliage. The growth may be permitted to extend where there is space to admit of its full exposure to light, but not otherwise, as overcrowding and overcropping are often the causes of failure and more frequently so than any other error of culture. Remove all superfluous, badly placed, deformed or small bunches. Crop lightly, which means size, quality and high finish; bulk signifies small fruit, bad colour, poor quality, often shanking and always non-keeping. Water thoroughly when necessary; one good watering is worth many dribbles. Afford top-dressings of chemical manures occasionally and a light mulch of sweet lumpy manure will prove beneficial in most cases by encouraging surface roots and maintaining the moisture uniformly.

Vines Cleared of their Crops.—Syringe the Vines occasionally to keep the foliage clean, afford water to render the soil moist, supply an occasional top-dressing of chemical manure of a phosphatic and potassic rather than a nitrogenous nature, and a light mulching to keep the surface from cracking as well as to prevent the roots going down in search of moisture. Allow a moderate extension of the laterals, but not permitting them to interfere with the principal leaves. Some lateral extension is absolutely necessary to prevent the starting of the main buds and the premature ripening of the foliage. There is no fear of the wood not ripening, the difficulty is in the opposite direction—loss of foliage and starting into growth instead of going to rest in late summer. Ventilate freely when the temperature rises above 60°.

Houses of Ripe Grapes.—Black Grapes will be better for slight shade from powerful sun, some pilchard, or a double thickness of herring nets drawn over the roofs, will mostly be sufficient shade, and a good

spread of foliage will not injure the berries, but assist in Hamburgs keeping colour. Moderate air moisture will not injure the Grapes if accompanied by free ventilation. Keep laterals fairly under, but a little extension will assist in the retention of the principal leaves, and upon their continuance in health depends the maturity of the buds for next year's crop. Muscats and all amber-coloured Grapes improve in colour after being apparently ripe, and bear exposure to light without detriment up to a certain point, that of the rich golden amber stage, but after that they become darker and blotchy, then the skin is very susceptible of moisture, which must be strictly guarded against by free ventilation.

Grapes Ripening.—Afford these a free circulation of air on all favourable occasions, with enough constantly to insure a change of air, as it is a confined stagnant atmosphere that does all the mischief in Grapes "spotting" and cracking. Keep sufficient heat in the pipes to maintain a night temperature of 65°, and 70° to 75° by day, with 80° or 90° through the day from sun heat. Avoid a very dry atmosphere, damping occasionally, and do not allow the border to become dry. Moderate lateral growth will favour Hamburgs and Madresfield Court, but Muscat of Alexandria colours best when exposed to the light, yet a little lateral growth is desirable as a safeguard against shanking, and for the maintenance of healthy root-action.

Grapes Scalding.—Muscat of Alexandria and Lady Downe's are more liable to "scald" than most other varieties, but Hamburgs sometimes suffer severely when completing the stoning process. At that time air should be given abundantly, sufficient warmth being kept in the hot-water pipes to maintain a night temperature of 65° to 70°, and 5° to 10° more artificially in the daytime, leaving ventilation on at night, and increase it before the sun acts powerfully upon the house in the morning. This attended to there will be little, if any, scalding, for it is keeping close, moist, and cold that renders Grapes liable to scald if the weather prove bright.

Vines in Pots.—Stop those for fruiting next season when from 6 to 8 feet long, and pinch the laterals and sub-laterals to one joint as produced. Obtain as much stored-up matter in the Vines as possible by judicious feeding and cleanly foliage thoroughly exposed to light and air. Vines intended for planting should be kept in comparatively small pots, and in that case they will not make a large amount of lateral growth, which need not be closely pinched; but it is better to stop at the first joint, and afterwards not allow the sub-laterals to interfere with the principal foliage.

Cucumbers.—Any pits or houses that have been used for forcing Strawberries, Vines in pots, or wintering bedding plants may be utilised for growing a late supply of Cucumbers. The plants may be grown in pots 12 inches in diameter, or larger, draining them well, and only partly filling them with compost so as to leave space for fresh additions, or they may be grown in boxes of about 15 inches depth and 18 inches to 2 feet square. A wood or other trellis may be improvised at 15 inches from the glass. No fire heat will be necessary, the house being closed between 3 and 4 P.M., syringing then, the floors and every available surface being kept damp so as to secure a good moisture through the day; but do not syringe in the morning, it often being the cause of great injury to the foliage. Admit air at 75°, and allow the temperature to rise to 85° or 90° with sun, and close between 80° and 85°, and if the temperature rise afterwards to 90°, 95°, or even 100°, all the better. Train with a single stem to the trellis, rubbing off all laterals to that height, then allow them to grow, pinching the leader after it has advanced about two-thirds across the trellis. The laterals may be stopped one or two joints beyond the show of fruit, covering the trellis evenly without overcrowding.

In the Cucumber house fire heat will only be necessary to prevent the temperature falling below 65° at night and to ensure 70° to 75° by day. Attend well to stopping the shoots, removing bad leaves, well thinning the old growths, and watering with liquid manure about twice a week. Sprinkle some sweetened horse manure on the bed once or twice a week to encourage surface roots, and occasionally a little soot may be used, both of which give a deep green colour to the foliage and fruit.

Pit and frame Cucumbers may be watered about 4 P.M., closing then or earlier according to the weather, but it is not safe to close so early as to raise the temperature above 90° or 95°. Liquid manure should be given occasionally, but it is not desirable to apply it over the foliage nor too frequently. Keep the growths fairly thin, thinning out old shoots and encouraging others in their places so as to keep up a succession of bearing wood. Stop one or two joints beyond the fruit. Avoid overcropping and allowing the fruit to remain on the plants a day longer than can be helped. Shade only to prevent flagging, and admit a little air early as a safeguard against scorching.

THE KITCHEN GARDEN.

Asparagus.—Owing to the coldness of the weather Asparagus cannot have been exhausted so much as to make it imperative to cease cutting before Peas are plentiful. In the more southern districts it may be advisable to let all the shoots grow after the middle of June, but there is no very urgent necessity to cease cutting for yet another week or so in less favoured localities. It is during the ensuing few weeks that the foundation for the next crop will be laid. If either from undue exhaustion or neglect of the beds nothing but comparatively weakly growths form, then the shoots next spring will be correspondingly weak. Vigorous well matured growth form extra strong basal buds, hence the necessity for freely thinning out where there are great thickets of growths, and of taking good care of those reserved. When nearly fully

grown Asparagus becomes very top-heavy, and is liable to be broken down and nearly twisted off during rough wet weather. This should be prevented. Somewhat isolated growths can be supported by means of a stake to each, groups could be supported by Pea stakes, and lines of growths by a few uprights and running rods.

Young Asparagus.—Seedlings of either last year's or this season's raising will transplant now, the latter scarcely ceasing to grow if moved during showery weather. This admits of blanks in beds already formed being filled now instead of waiting till next spring, while if seeds are sown in rows where the bulk of the plants are to remain these also can be regulated and filled where necessary. As a rule Asparagus seed germinates freely, not much that is sound failing to grow. Where sown thickly there will most probably be found many more plants than ought to be left. Thin out to at least 4 inches asunder. Beds to be kept free of weeds and from cracking by means of occasional surface hoeings. Lettuce might still be grown on newly formed beds, but even these harbour slugs, and nothing but scarcity of garden room justifies sowing or planting them among Asparagus. All the while the weather keeps showery slugs must be kept in check by means of trapping, hand-picking and frequent dustings of the plants with soot and lime, otherwise they will skin all the stems and ruin the Asparagus.

Borecole.—If the ground is ready for this important crop it ought to be planted directly the plants are large enough to put out. None of the varieties can very well be grown too strongly. Plant on moderately rich firm ground, and allow a distance of 2 feet asunder. Where Borecole has to succeed other crops the plants ought either to be raised somewhat late and thinly, or pricked out temporarily in nursery beds, transplanting from these with a trowel.

Broccoli.—To have abundance of Broccoli in close succession to Autumn Giant Cauliflower a good breadth of Veitch's Autumn Protecting Broccoli ought to be put out now. Give the plants the benefit of a deeply dug, moderately rich piece of ground, and place them 2 feet apart in rows 30 inches asunder. Move from beds where pricked out a few hours after watering if at all dry, and transplant with a trowel, saving as much soil as possible about the roots. Those in seed beds may safely be drawn and dibbled out, but any pricked out are, when subjected to this method of transplanting, very slow in recovering from the check. Seeing that the bulk of the plants of this or any other early autumn Broccoli will have hearted in before very severe frosts are usually experienced, there is nothing to prevent planting them freely among widely disposed rows of early Potatoes. According as the latter are dug draw the soil up to the Broccoli stems. Successional and late Broccoli, whether put out now or a few days or weeks later, according as the ground is cleared of Potatoes, Peas, Strawberries, and such like, should have much firmer though not very poor ground. The sturdier and shorter in the stem they can be kept the less liable are they to be damaged by frost, hence the necessity for raising the plants thinly and not too early, and planting on solid ground. Any planted now on recently dug ground should have extra room allowed them. Sprouting Broccoli is the most reliable kind, and this should be treated very similarly to Scotch or other Borecole.

Brussels Sprouts.—No time ought to be lost in planting the main portion of this most important crop. What suits Borecole will also do for these. The plants given a fairly long period of growth on moderately rich ground invariably give the best results. If early short-topped Potatoes have been planted in rows 3 feet or rather more apart, plant the Brussels Sprouts 30 inches asunder between these. See that the haulm does not smother the young plants, this, however, being scarcely probable this season, and as fast as the Potatoes are lifted bank the soil up to the stems of the Brussels Sprouts. They require to be thus steadied when well grown. On firmer ground, well in the open, the plants may be disposed 2 feet asunder in rows 3 feet apart.

Cauliflowers.—Supposing the main crop of Autumn Giant Cauliflower was raised this spring and duly pricked out the plants ought to be at once finally planted out. They will succeed among widely disposed early Potatoes, but are more often accorded a good open spot. Fresh, well manured ground suits this as well as all other varieties of Cauliflower, and if extra fine hearts are required allow the same space as recommended for early Broccoli. Early and successional Cauliflowers are now hearting freely, and will be greatly improved in size and quality if given an occasional soaking of good liquid manure. Keep a sharp look out for caterpillars, and place some of the older leaves well over the hearts with a view to preventing greening.

Coleworts.—A good supply of these during the autumn and early winter months rarely fails of appreciation. The London or Rosette Colewort is perhaps the most popular, and with this may well be grown Shilling's Queen and Nonpareil, the Winningstadt also doing good service when raised and planted early. Sow the seed at once and protect from birds.

Chou de Burghley.—If seeds of this are sown late in April or early in May, and the plants put out at the same time as Maincrop and late Broccoli, excellent hearts should be had at midwinter and later. When raised earlier and grown strongly, nothing but rank growth and coarse hearts need be expected. Plant any time during the next month, 18 inches apart in rows 2 feet asunder, and make the ground firm. Treat Couve Troncbuda very similarly.

Savoys.—Those from seeds sown late will soon be quite large enough for planting, and if the plants are not long kept in the seed beds they will heart-in quite as soon as wanted. The smaller quick-hearting varieties, of which Tom Thumb is a good type, may be planted 12 inches apart each way, and are the best for the outside rows. Next these may

be arranged Dwarf Ulm, planting this 15 inches asunder, and similar space may be given the taller and later Dwarf Green Curled. Drum-head is the strongest and latest of all, and this should be put out 18 inches apart each way. An east border suits Savoys well, and the ground should be moderately rich and firm.

PLANT HOUSES.

Allamandas.—If these are to flower profusely and continue to do so over a long period of time the plants must be fully exposed to the sun and be kept growing. Once they are brought to a standstill the wood becomes firm and ceases to flower. If grown in pots early started plants will have filled them with roots, and should be top-dressed with rich material consisting of one-third rich loam, and the remainder cow manure. If the pots are full a strip of zinc or piece of turf may be arranged round the sides of the pots close to the rim, and the compost placed inside. The roots will soon take possession of this, and then weak stimulants may be given every time the plants need water, or better still, a little chemical manure applied to the surface at intervals of a fortnight. On no account allow the plants to suffer by an insufficient supply of water. Give air daily, and maintain a close moist atmosphere.

Stephanotis floribunda.—Although this plant does not need shade, a slight covering is beneficial during the hottest part of the day through the flowering season. It prevents the flowers opening too rapidly, and they also last in good condition for a longer period. Plants that are trained under the roof and are growing rapidly may have the young shoots drawn out and allowed to hang down. Some attention is needed two or three times a week, or the shoots soon become twisted together. This method allows of the main shoots being trained more closely under the roof. The shoots that hang from the roof flower profusely, and the plant can be kept much cleaner by a free use of the syringe than when the whole of the growths are closely trained together under the roof. From the present time plants that are in full activity should not be kept too warm, close, or moist. A temperature of 60° at night will be ample with a liberal application of air during the day, this will ensure firm growth that will flower well. If the plants are grown in pots and crowded with roots a surface dressing of decayed manure will prove beneficial.

Bougainvillea glabra.—Plants that have been brought forward in brisk heat and are showing their flowers should be removed gradually to cooler and more airy quarters. When the flowers are developed in brisk heat they are devoid of colour. The best coloured flowers are those from plants grown in an intermediate temperature, and then developed with abundance of air. Plants that are growing freely under these conditions may have the weakest shoots thinned, so that the stronger ones retained when fully exposed to the sun will flower for 4 or 5 feet of their length. Stimulants either in the form of liquid or chemical manure must be given if the plants are confined in small borders or pots.

Caladiums.—When grown in small pots plants of *C. argyrites* are invaluable for purposes of decoration. If a large number of smaller plants are needed those mentioned may be divided and placed again in 2½-inch pots, putting them in a shady moist place until they begin to grow. Varieties of larger growth should be repotted if necessary. These plants are useful for the conservatory or other houses where effective arrangements have to be considered during the summer. From this time slight shade will be needed for a few hours during the hottest part of the day, but on no account must Caladiums be overshaded.

Justicia flavicom.—The earliest cuttings will be well rooted, and may be placed in 4-inch pots and grown for a time in an intermediate temperature. Old plants that were partially cut back will have made clean healthy cuttings, which may be inserted singly in thumb pots. Every one will root in brisk heat under hand-lights. Once the necessary stock of cuttings have been inserted the old plants may be thrown away.

Gloxinias.—Seedlings that have been placed in pans or boxes and need more room may be bedded out in a frame or a slight hotbed with suitable soil on the surface. They grow rapidly under these conditions, and yield an enormous number of flowers. Where accommodation of this nature cannot be given they may be transplanted into boxes and allowed to flower in them.



APIARIAN NOTES.

SUPERING.

ALTHOUGH the weather continues unfavourable, with the season still before us, we are living in hopes that it will not be a barren one of honey. The fruit prospect has gone, and Clover and pasture generally is much injured by the late frosts, and the Heather has still a wintery appearance. We must, however, prepare for brighter times. It is marvellous how some persons allow themselves to be guided by those of less experience. A few years ago it was the rage amongst many bee-keepers to have large holes in the crowns of their hives to give the bees free access to and from

their supers. As many as 16 to 20 inches of space were given, although the entrance to the hive proper had only from 3 to 4 inches. Now it is entirely opposite. Free passage to the supers is restricted by perforated zinc, which has openings so contracted that bees have a great difficulty to pass through. Yet after all, in many instances eggs and dead drones are found in the supers, which puzzles amateurs and professionals alike. Although this is a repetition of what I wrote years ago, I know there are many persons who have not read it, who are at the present desirous of knowledge.

THE RESTRICTED SYSTEM.

In the first place, before a queen will deposit an egg in a cell it must be specially prepared for its reception or be in progress. Queens will neither deposit eggs in super comb, nor outside the brood nest if the latter is large enough, nor in the former if the bees have prepared the cells for the reception of honey; nor will they prepare cells in supers for brood if the brood nest is sufficiently large. It is abnormal altogether for bees to carry on the internal economy of the hive satisfactorily under the modern double restricted system. If queen excluders were made of some friable material the bees would soon make short work of it and remove it. The restricted system and the partial dividing of a hive favours swarming and raising of queens and fertile workers. So although a laying queen may be excluded, fertile workers deposit eggs in the supers bee-keepers have so carefully guarded with excluder zinc, and further restricted the yield of honey with separators.

THE STEWARTON SUPERS.

At all our honey shows, where there were competition with honey in combs from the two systems, I never saw comb raised under our system beaten, and I am in possession of voluminous correspondence from numerous bee-keepers throughout Britain testifying to the above. When I began bee-keeping in earnest I aimed at the perfection of the Stewarton supers, with their squarely built and prettily finished uncut edges, which I frequently saw in shop windows, but never met the original owners of these. I saw plainly from them, that with the darkened and cut edges of our super combs, our management was at fault, and experienced that combs of supers taken from the tops of hives with little passage way were not fastened to the tops of the hives. I therefore constructed the crowns of my hives with adapting boards, tunneled from the centre to near the outside, where the bees entered the supers, excluding the colouring vitiated air and queen at the same time, as well as preserving the heat of the brood nest in the large hives I then used. My successful ideas, which I so early put in practice, were practically those of the Stewarton system, as yet unsurpassed.

TWO QUEENS IN ONE HIVE.

It was in 1862 that I first made myself acquainted with many of the Stewarton bee-keepers, and in 1893 I saw a super of 80 lbs. raised upon two stocks of bees in Stewarton hives. They were placed side by side, a thin adapting board was put over them, and a huge octagon super placed on it, the outside slides drawn, and the bees from both hives wrought in the one super.

I am still feeding my bees, and advise all who wish to keep their stocks in good condition to catch the honey flow if it does come, to do the same.—A LANARKSHIRE BEE-KEEPER.



* * All correspondence should be directed either to "THE EDITOR" or to "THE PUBLISHER." Letters addressed to Dr. Hogg or members of the staff often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post, and we do not undertake to return rejected communications.

Soil Enrichment for Tomatoes (*Amateur*).—You have scarcely made the circumstances clear to us, and have also so deferred your

application as to leave us the least amount of time and space for answering your letter this week. It is very easy and too common to make the soil too rich for Tomatoes and induce long-jointed succulent growth. If you have reason to fear the border is not rich enough, 2 ozs. of the dissolved guano to the square yard will be enough to apply at the present time.

Abnormal Foxglove (*E. F. M. S.*).—We have had dozens of similar flowers sent to us from time to time. They are produced at the extremity of the stem, the normal flowers having expanded and divided into segments. An illustration of flower was given in the *Journal of Horticulture* last year, July 13th, 1893.

Grafting Orange Trees—Dimensions of Tennis Court (*L. B.*).—If you have a heated structure or a warm propagating case in which to put the Orange plant, you could graft it as shown in the illustration (fig. 79). This interesting work is done by the aid of a bottle. Instead of cutting a branch to be attached only 5 or 6 inches long, let it be a foot or more in length, in fact just as long as needed. Place the lower end in a bottle of water, about 3 inches from the top, take a slice off the bark 2 inches long, and put into the firm wood. An exactly similar slice, and exactly opposite, being taken from the stock, the two can be joined and secured, as shown in the sketch. The water will support the graft until the union takes place, and this is quicker and more certain if the grafted part is shaded from the sun and sprinkled every day. When the graft commences growing, gradually cut away the head of the seedling tree, removing a little at a time, until only the graft remains. The part inserted in the bottle may then be cut off close to the stem. If the portion attached is taken from a fruitful tree, fruit will be produced years before it could be borne by a seedling tree. The dimensions of a tennis court are:—Extreme length, 78 feet; width, 36 feet; inner court, 42 feet long, 27 feet wide, divided lengthways by a white line, crossways by the net.



FIG. 79.

Worms in Lawns (*C. Boom*).—A GRAFTED ORANGE TREE. There are two methods which have proved satisfactory. We should try the second one first. 1, Half an ounce of corrosive sublimate (bichloride of mercury) dissolved in 15 gallons of water will cause worms to come to the surface; but care must be taken that fowls do not eat them, otherwise they will be poisoned. 2, Place a peck of quicklime in 30 gallons of water, stir well, and allow it to stand for a few days until it is quite clear, then water the lawn thoroughly. The worms will come to the surface, when they may be swept up and cleared away. This is an old and useful mode of eradication.

Chrysanthemum Plants Showing Buds (*E. M.*).—The plants now showing buds at the base of the leaves should be cut back to where there are no flower buds; or if a terminal bud remove it, and this will give strong side or other growths, which will furnish buds in due course. Nitrate of soda should be used sparingly for Chrysanthemums, and to follow you may employ clear soot water, 1 quart to 10 gallons of water, the soot being placed in a bag, stirring it every day for about a week, when use the clear water or liquid. Guano, 1 oz. to a gallon of water, may also be given; but do not feed so much before as after the buds are taken, yet the plants must be made vigorous.

Insect Devouring Ferns (*J. C. C.*).—The "beast" is the black Vine weevil (*Otiorhynchus sulcatus*) and a remarkably fine specimen. Kill all you can, now is the time to save broods from coming for another year. You have hit on the right plan, forty in a night being excellent work, as they have a habit of dropping from the food plants and feigning death on the ground, though not for long. Pursue the treatment with the beetles, also with the Roses, for you have the worst fungoid pest to deal with that attacks the "queen of flowers," and it happily is not of frequent occurrence. Be sure also to give abundance of air, and do not use more moisture than is absolutely necessary.

Blight on Plane Trees (*R. G.*).—The "blight" on Plane trees is unusually prevalent this season, and there is a great store of "honeydew" in consequence, of which the bees avail themselves. Insects are the cause of the "blight," which is generally followed by a fungus finding nourishment in the secretion of the flies, but it does no harm to the foliage other than closing the pores, causing the leaves to fall prematurely. The cause of the unusual prevalence of the insects may have been the favourable nature of last season for insect life, which would result in a much larger deposition of eggs, and consequently greater preponderance of the insects this season. Beeches are, as you say, freer

than usual this year from blight, but it is quite early enough for them to become affected yet.

Black Hamburgh Grapes Deficient of Bloom (B.).—"Shiny" Grapes are common, and it generally arises from their having the skins rubbed in the process of tying up the shoulders of the bunches and in removing the laterals. There are other causes, as that of moisture being greatest at the upper part of the house through its being the point farthest from the heating apparatus or pipes, and especially where early closing is practised, with inattention afterwards to let the pent-up moisture escape by opening the ventilators a little. This accumulation of moisture, along with the free admission of air in the daytime at that part, both of which act unfavourably on the skin of the Grapes as regards the ultimate formation of bloom, for the cuticle is harder and needs not the protective bloom coating.

Treatment of Azaleas after Flowering (J. P.).—The proper treatment is to keep the plants under glass, and afford them a moist and somewhat warm atmosphere, so as to encourage them to make a good growth. When that is complete, and the points of the shoots thickening a little, they may be placed outdoors in a sheltered situation on a thick bed of ashes, either naturally or artificially shaded for a few days, or the sun may prejudicially affect the foliage. The plants are generally sufficiently grown and the wood ripened, as to admit of being placed outdoors by the middle of July, early flowered plants a few weeks sooner, and late plants somewhat later. It is entirely a matter for judgment from the condition of the plants. They must be housed before the last week in September.

Eelworm in Onions (Seedsmen).—The "curious form" in the young Onion plants is caused by eelworm (*Tylenchus devastatrix*). The pests are now breeding; indeed, it is questionable if they visit the plants for any other purpose, as they can and do live indefinitely on decaying organic matter in the soil, from whence they proceed and attack the various plants, as this pest has not a particular liking for any kind of host. There are enormous numbers of eggs, vaster in the cyst state, and a few young emerged. Pull up all such affected plants and burn them, not laying them on the ground before so doing, and having some freshly slaked quicklime ready promptly dust it over the ground, using about half a peck per rod. There must be no delay, for the young will pass from the infested to the unaffected plants.

Securing the Grafts of Apple Trees (J. B.).—The ligatures should be loosened, if not removed, so as to prevent the bark growing over them, but as the union may be complete they may, in most instances, be withdrawn altogether. It is necessary, however, to so renew the ligatures in some cases, so as to keep the grafts steady or prevent their displacement. In most instances stakes are advisable for securing the scions, and in doing this allow room in the ligatures for the swelling of the shoots. The growths from the stocks that have failed will be fit for budding, if you think proper, in July, or they may be grafted another year, but only one shoot should be left on each stock, so as to secure strong growth. Paradise stocks are propagated from layers, stools being provided, and the one-year-old shoots layered in the autumn, notching them at a joint, that part being pegged and covered with soil to the depth of 2 or 3 inches, and the point of the shoot kept out of the ground a similar length. All the buds should be removed on the part inserted in the soil, which will still further accelerate the pushing of roots, but that is generally very free.

Spots on Grapes (T. J. E.).—The spots on the Grapes appear to be modified forms of scald, or result of injury at a previously recent period. The cells immediately beneath and surrounding the damaged part of the berry are quite sound and not permeated by the mycelia of any fungus, but there is evidence of mycelial ramifications in the discoloured parts, yet they are so undeveloped as not to admit of satisfactory determination. The appearance has some resemblance to "spot," and you may place flowers of sulphur on shelves to which the sun has access, or in saucers with water, also where the sun shines. The chief thing, however, is to attend to the ventilation and admit a little air constantly. It is not likely to be caused by anything wrong at the roots, as that would affect all the Vines similarly, but is clearly due to some external cause, and appears to be from some direct injury, such as careless handling in trimming the Vines or in thinning the berries. It may also be due to moisture resting on the berries, as it does more on the varieties you name than most others, and the atmosphere being heated by the sun before air was admitted.

Diseased Onions (Inquirer).—The single Onion in the paper had a maggot in it eating at the "heart" of the plant until we disturbed it. The other plants with the thick bases or "fuzzy" bottoms were, in some cases, afflicted with maggot, but in a less advanced state than the single plant. On examining the plants we found eggs and cysts of eelworm (*Tylenchus devastatrix*), also a few "worms" of about 3 inches length, or one-third grown under a power of 260 diameters of the microscope. Worse than that, we noticed a mite, a four-legged creature, which, as it is new, we name *Phytoptus alli*. It is 1 inch long under the microscopic power mentioned above, and has two rather long bristles near the tail end. Any Onions in the condition of those you sent us in single and smaller parcels, or with "fuzzy" necks, pull up, place in a pail, take to the nearest fire and burn; then sprinkle quicklime on the plots as advised to another correspondent. We cannot tell you whether the maggot is likely to attack the other parts of the plots, but there is danger, and you cannot do better than take the precautionary steps that have been advised by our correspondents, and in which you

have been interested. The larger bundle of plants—those with the thin necks—are not infested with maggots, or any pest, but they are not by any means safe, and you should sprinkle the plot with petrolcum, as repeatedly advised in these pages, as a safeguard against attack, for we have not found the Onion crop safe until after the middle of July.

Names of Plants.—We only undertake to name species of plants, not varieties that have originated from seed and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in firm boxes. Slightly damp moss, soft green grass or leaves form the best packing, dry wool the worst. Not more than six specimens can be named at once, and the numbers should be visible without untying the ligatures, it being often difficult to separate them when the paper is damp. (*D. H. M.*).—*Dipladenia boliviensis*, good flower. (*Armitage*).—*Saxifraga Wallacei*. (*J. L.*).—A form of *Vanda tricolor*, probably *Dodgsoni*. (*D. B.*).—1, *Lycaste Skinneri*; 2, *Oncidium macranthum*; 3, a good form of *Odontoglossum crispum*. (*Amateur*).—1, *Aquilegia glandulosa*; 2, *A. cœrulea*. (*F. H.*).—1, *Begonia Weltoniensis*; 2, *B. manicata*. (*York*).—*Phoenix rupicola*.

TRADE CATALOGUES RECEIVED.

J. Carter & Co., High Holborn, London.—*Chrysanthemums, Bedding and Hardy Plants.*

Michael Rains & Co., Mansell Street, Aldgate, E.C.—*Dutch Bulbs.*

COVENT GARDEN MARKET.—JUNE 13TH.

PRICES unaltered, and business steady with good supplies.

FRUIT.

	s.	d.	s.	d.		s.	d.	s.	d.
Apples, per bushel ..	2	6	10	0	Plums, per half sieve ..	0	0	to	0 0
Tasmanian, per case ..	8	0	12	0	St. Michael Pines, each ..	2	0		6 0
Grapes, per lb. ..	2	0	3	0	Strawberries per lb., morn-				
Lemons, case ..	10	0	15	0	ing gathered ..	1	0		5 0
Peaches, per doz. ..	6	0	18	0					

VEGETABLES.

	s.	d.	s.	d.		s.	d.	s.	d.
Asparagus, per bundle ..	2	0	5	0	Mushrooms, punnet ..	0	9	to	1 0
Beans, Kidney, per lb. ..	0	6	0	9	Mustard and Oress, punnet	0	2		0 0
Beet, Red, dozen ..	1	0	0	0	Onions, bushel ..	3	6		4 0
Carrots, bunch ..	0	3	0	4	Parsley, dozen bunches ..	2	0		3 0
" new, bunch ..	0	9	1	0	Parsnips, dozen ..	1	0		0 0
Cauliflowers, dozen ..	1	6	3	0	Potatoes, per cwt. ..	2	0		4 6
Celery, bundle ..	1	0	1	3	Salsafy, bundle ..	1	0		1 5
Coleworts, dozen bunches	2	0	4	0	Scorzonera, bundle ..	1	6		0 0
Cucumbers, dozen ..	1	6	3	0	Shallots, per lb. ..	0	3		0 0
Endive, dozen ..	1	3	1	6	Spinach, bushel ..	1	6		3 0
Herbs, bunch ..	0	3	0	0	Tomatoes, per lb. ..	0	4		0 8
Leeks, bunch ..	0	2	0	0	Turnips, bunch ..	0	3		0 4
Lettuce, dozen ..	0	9	1	0	" new, bunch ..	0	8		0 10

AVERAGE WHOLESALE PRICES.—OUT FLOWERS.

Orchid Blooms in variety.							
	s.	d.	s.	d.		s.	d.
Arum Lilies, 12 blooms ..	1	6	to	3 0	Mignonette, 12 bunches ..	3	0 to 6 0
Bouvardias, bunch ..	0	6		1 0	Narciss, various, doz. bnchs.	3	0 6 0
Carnations, 12 blooms ..	0	9		1 6	Orchids, per dozen blooms	1	0 9 0
Coruflowes, doz. bunches	2	0		4 0	Pæonies, dozen bunches ..	6	0 15 0
Eucharis, dozen ..	2	0		4 0	Pansies, dozen bunches ..	1	0 2 0
Gardenias, per dozen ..	1	0		4 0	Pelargoniums, 12 bunches	6	0 9 0
Iris, dozen blooms ..	0	9		2 0	Pelargoniums, scarlet, doz.		
Lilac (French) per bunch	2	6		4 0	bunches ..	3	0 6 0
Lily of Valley, doz. sprays	1	0		1 6	Primula (double), dozen		
" doz. bnchs.	4	0		8 0	sprays ..	0	6 1 0
Lilium caudidum, dozen					Pyrethrum, dozen bunches	3	0 6 0
bunches ..	12	0		18 0	Roses (indoor), dozen ..	0	6 1 0
Lilium caudidum, dozen					" Tea, white, dozen ..	1	0 3 0
blooms ..	0	6		0 9	" Yellow, dozen ..	2	0 4 0
Lilium longiflorum, per doz.	2	0		4 0	Roses (French), per dozen	1	0 2 6
Maidenhair Fern, dozen					Roses, Safrano (English),		
bunches ..	4	0		6 0	per dozen ..	1	0 2 0
Marguerites, 12 bunches ..	1	6		4 0	Roses, Maréchal Niel, per		
Moss Roses (French), doz.					dozen ..	1	6 5 0
bunches ..	4	0		9 0	Stephanotis, dozen sprays	1	3 2 0
Myosotis or Forget-me-					Tuberose, 12 blooms ..	0	4 0 6
nots, dozen bunches ..	1	6		2 0	Wallflowers, doz. bunches..	2	6 4 0

PLANTS IN POTS.

	s.	d.	s.	d.		s.	d.	s.	d.
Arbor Vitæ (golden) dozen	6	0	to	12 0	Hydrangea, per dozen ..	9	0	to	18 0
Arum Lilies, per dozen ..	6	0		12 0	Ivy Geraniums ..	5	0		8 0
Aspidistra, per dozen ..	18	0		36 0	Lilium Harrisii, per dozen	15	0		30 0
Aspidistra, specimen plant	5	0		10 6	Lobelia, per dozen ..	4	0		6 0
Calceolarias, dozen pots ..	6	0		9 0	Lycopodiums, per dozen ..	3	0		4 0
Cineraria, per dozen ..	4	0		6 0	Marguerite Daisy, dozen	6	0		12 0
Dracæna terminalis, per					" yellow, doz. pots	6	0		18 0
dozen ..	18	0		42 0	Mignouette, per doz. ..	6	0		9 0
Dracæna viridis, dozen ..	9	0		24 0	Musk, per dozen ..	4	0		6 0
Ericas, per dozen ..	9	0		24 0	Myrtles, dozen ..	6	0		9 0
Euonymus, var., dozen ..	6	0		18 0	Nasturtiums, per dozen ..	1	6		6 0
Evergreens, in var., dozen	6	0		24 0	Palms, in var., each ..	1	0		15 0
Ferns, in variety, dozen ..	4	0		18 0	" (specimens) ..	21	0		63 0
" (small) per hundred	4	0		8 6	Pelargoniums, per dozen ..	6	0		15 0
Ficus elastica, each ..	1	0		7 6	" scarlet, per doz.	4	0		6 0
Foliage plants, var., each	2	0		10 0	Roses, various, per dozen ..	12	0		36 0
Fuchsia, per dozen ..	6	0		9 0	" (Fairy), per dozen ..	9	0		12 0
Heliotrope, per dozen ..	5	0		8 0	Spiræas, per dozen ..	6	0		12 0
					Stocks, per dozen ..	3	6		5 0

Roots in variety for planting out, in boxes or by the dozen.



CHANGING AGRICULTURE.

Is there, then, no alternative? is the question which very naturally arises when we are told that Essex is a Wheat-growing county, and that a majority of its farmers are ruined. Said Mr. Hunter Pringle, the Commissioner of the Board of Agriculture, in his recent report, "The ensuing year (1894) will witness a downfall more disastrous in its consequences than any stranger to Essex could possibly apprehend. If three-fourths of the farmers who have served notices to quit in 1894 act upon them, thousands of acres will be left tenantless, and it requires a stretch of imagination more than I can make to suppose that new tenants will be found." He says also that "it is no longer a question of rent, but simply an example of the cost of cultivation exceeding the value of produce." But this is no new thing. For considerably upwards of a decade Wheat growing has been unprofitable; the fact has been within the knowledge of every farmer, and yet many of them persist in sowing Wheat. Surely, to say the least, such persistence is as unwise as it is reckless. Again, we ask, Is there no alternative?

The Commissioner suggests a readjustment of the incidence of taxation, and taking in hand the agricultural education of the rising generation, or, in other words, relieve the land of burdens which it is so obviously unable to bear, and instruct those who cultivate it to do so to better purpose. While pointing out that the milk trade is overdone, he adds that butter and cheese making are greatly neglected. Why? From ignorance or prejudice, or both, would probably be a correct answer. The fact that the value of dairy produce imported into this country last year was £21,571,375, should act as an incentive to exertion in extending the home trade; in the production of a superior article of uniform excellence both in cheese and butter. Hitherto such statements have stirred up the foreign rather than the home producer, and the foreign trade is extending every year. Take that of Australia, for example. This was initiated in 1889-90, when the value of butter sent to this country from Victoria was £51,300. Since then the figures for the consecutive seasons have been £91,200, £225,000, £404,432; and in the last season which ended on April 28th, the amount was £761,273 for 7315 tons of butter, the wholesale value of which was 11d. per lb., 41,524,000 gallons of milk being required to produce it.

This is such a remarkable example of the growth of a trade by leaps and bounds that we give the figures in full. It shows how much good butter is in demand, how highly the Victorian butter is esteemed, how practically limitless are the possibilities of the trade. No wonder it has grown, when the retailer can make from 25 to 30 per cent. profit upon this butter, which is of such high uniform excellence.

Meanwhile we hear of more and more land at home going out of cultivation because Wheat-growing is unprofitable, and the milk trade is overdone. Of course Wheat-growing is unprofitable; how could it be otherwise when in 1885 the world's total production of Wheat was only 800,000,000 bushels, whereas it is now 2,400,000,000 bushels? As for the milk trade, the remedy is as simple as sure. It has been pointed out repeatedly in our Home Farm articles; we repeat it once more. Let milk only be sent to great centres of population from a given radius of twenty or thirty miles. Outside such radii divert the milk to butter and cheese factories, established and kept going by co-operation of the farmers themselves, upon the

lines of similar factories in the south of Ireland. A first-class article of uniform excellence would then be a certainty; it is equally certain to command a prompt and steady sale. If a gigantic trade can be established so quickly and with such certainty for colonial butter, it can be done even more easily for the home-made article of equal or even better quality.

That Essex clays can be speedily adapted to dairy farming has been proved to demonstration by the keen Scotch farmers who have migrated there in such considerable numbers. During our residence in that county we found that though southern farmers were wont to sneer at the thrifty Scotchmen they were in many an instance only too glad to copy their practice and make Wheat give way to milk. That was a simple enough matter; butter making is quite another thing, and had they tried it in farm houses on a large scale—i.e., making it the main industry of the farm—they would most probably have failed. There are conditions in the making of first-class butter beyond the scope of many a farmer—or shall we say the farmer's wife?

WORK ON THE HOME FARM.

Potatoes cut down to the ground by the severe frost of May 19th have quickly started into growth again, several side shoots appearing in place of the lost single-stem growth. This so clearly points to an inferior crop of under-sized tubers that the extraordinary measure of an immediate top-dressing of from 1 to 2 cwts. of nitrate of soda per acre to stimulate growth has been decided upon. This will both accelerate and invigorate growth of haulm and enlargement of tubers. Prompt action is clearly called for, as the growth of the next three or four weeks will determine bulk of crop and size of tubers. Remember that when once there is a cessation of the main or leading stem growth the tubers never grow any larger, so that June and the first fortnight in July is the golden time of development of the main crop. The advantage of thin planting was never more apparent than now. With the rows a yard apart, and the Potatoes 15 inches apart in the rows, growth can hardly be crowded, even with the multiplicity of stems that must follow the cutting-off of the leading stem by frost.

Apple tree caterpillars appear to be even more abundant than usual this season, and the sprayer will have to be used repeatedly to eradicate them. Vermorel's copper knapsack pump, holding 3 gallons, and costing 35s., is a very handy implement for this work. The mixture consists of quarter ounce of Paris green (a deadly poison) dissolved in 5 gallons of water. The sprayer coats the whole of the leaves with the poison, and the caterpillars are then destroyed by eating the leaves. Do not forget that the whole of the caterpillars are not hatched at the same time. By watchfulness and persistent use of the sprayer the whole of them can be destroyed.

Showery weather has kept back hoeing, while the much higher temperature causes weeds to grow as fast as the legitimate crop. By getting as much singling of root and Cabbage crops done now we shall be ready to clear off arrears of hoeing with the first few bright days. It is no small thing to have the plant of such crops singled and growing so freely as to be out of reach of harm from insect pests. With such a dripping June the Turnip fly has very little chance of doing serious harm.

METEOROLOGICAL OBSERVATIONS.

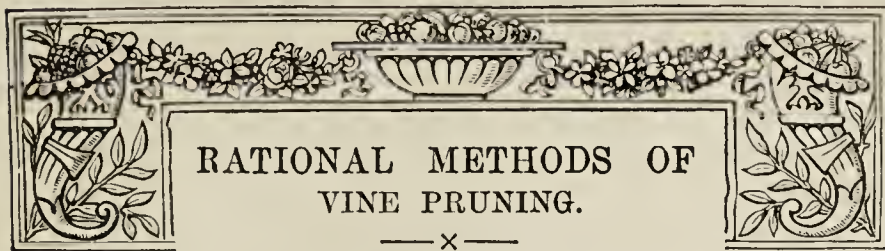
OAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude, 111 feet.

DATE.		9 A.M.					IN THE DAY.				Rain.
1894.	June.	Barometer at 32°, and Sea Level.	Hygrometer.		Direc- tion of Wind.	Temp. of soil at 1 foot.	Shade Tem- perature.		Radiation Temperature		
			Dry.	Wet.			Max.	Min.	In Sun.	On Grass.	
		Inchs.	deg.	deg.		deg.	deg.	deg.	deg.	Inchs.	
Sunday ..	3	30.003	60.4	56.0	S.W.	53.0	66.0	49.3	85.4	44.0	0.430
Monday ..	4	29.822	57.7	57.2	E.	53.9	68.3	52.6	92.8	46.1	0.090
Tuesday ..	5	29.820	57.8	52.6	S.W.	54.1	64.0	51.6	106.1	46.2	—
Wednesday	6	29.817	51.2	49.9	N.E.	54.1	57.1	50.1	70.4	50.6	0.418
Thursday ..	7	29.776	52.0	48.1	N.	53.2	62.7	47.7	108.9	47.3	—
Friday ..	8	30.002	55.7	51.9	W.	53.8	63.7	45.9	101.2	40.6	0.052
Saturday ..	9	29.870	57.0	54.3	S.W.	54.0	65.4	53.0	107.1	51.0	—
		29.873	51.0	52.9		53.7	63.9	50.0	96.0	46.5	0.990

REMARKS.

- 3rd.—Generally overcast, with spots of rain once or twice; but occasional sunshine.
 4th.—Heavy rain from 6.30 A.M. to 10 A.M., with thunder at 6.30 A.M.; overcast and damp till noon; fair afternoon, with some sunshine.
 5th.—Bright early, and occasional sunshine in morning; overcast afternoon; slight drizzle at night.
 6th.—Overcast, with occasional slight drizzle; rain from 5.30 P.M., and steady heavy rain from 6 P.M. to 9.30 P.M., and showers later.
 7th.—Overcast early; gleams of sun from 10 A.M., and generally sunny after 2 P.M.
 8th.—Overcast almost throughout, with spots of rain at times, and gleams of sun in afternoon.
 9th.—Overcast early, and rainy from 6 A.M. to 7.30 A.M.; sunny from 11 A.M. to noon, generally cloudy after.
 A rather wet week, with no shade temperature reaching 70°.—G. J. SYMONS.



RIGID adherence to orthodox rules may easily be carried too far in the pruning of Vines. It often has been carried too far in the past, crops of Grapes and reputations of men suffering accordingly. True it is that warnings have been given of the imprudence, if not the danger, of applying the same system of pruning to all Vines under all circumstances. But it is not necessary to travel far to observe that they have been in too many instances disregarded, though not in all. For the purpose of impressing a truth on many minds, some it may be expected incredulous, and others prejudiced, it is necessary to press it home again and again. The allusion to incredulity and prejudice does not of necessity carry with it a reproach. Both young men and those who can no longer be so regarded, yet who are comparatively inexperienced in the management of Vines in different varieties and various ages, are fully convinced that their method of pruning is right, even if the crops of Grapes are the reverse of satisfactory. They are firm in the belief that this is so because they follow strictly the system they have been taught, and which proved to the fullest extent successful. Correspondingly, when a departure is advocated they are apt to regard it as doubtfully sound, and it is possible the writer who ventures to recommend it may be regarded as something of a faddist. This is, perhaps, the natural outcome of inexperience. In saying this, again no imputation is conveyed, because a man may have had the best of training in the management of the particular Vines with which he was connected, but has not had opportunities for practising on those essentially differing in character, but with which he may be called upon to deal, as many a man has been, and failed through his inflexible adherence to orthodox methods.

The more experienced a gardener becomes the less disposed he is to change for the sake of change or finding out something new. So long as he attains his object, whether it be in Grape growing or anything else, he is apt to be content with his routine, and leave the field of exploration and discovery to younger men. If he has full crops of excellent Grapes from the system of close spur-pruning he is wisely content to pursue it; but if he is a thinker as well as a worker, and has acquired some knowledge on vegetable physiology, he would quickly depart from that practice when he perceived the necessity. It has been perceived and departed from with almost magical results in many instances both by the present writer and better men—not as a rule, though there are a few exceptions, by young men, but generally by those who have reached the meridian of life. These are they who can afford to smile complacently at the remarks about muddling and such like allusions by straight-laced probationers who may think it unprofessional to depart from what they conceive the only true canons of guidance in this work.

In the pruning of Vines we have to keep clearly in mind the object in view—not the object of the pruner so much as that of the owner of the Vines. The object of the pruner may be of a dual kind. First, he may wish to show his handiwork and give a demonstration to his brother gardeners who call on him that he knows how Vines should be pruned. Naturally he hopes for crops of Grapes such as followed the same system as it was applied to other Vines, but they do not come. There is nothing

dual about the owner's object. It is precise enough. He wants the best Grapes the Vines are capable of yielding, and cares nothing whatever about the system of pruning. Useless is it to explain to him the virtues of close spur-pruning if he has scanty crops of fruit. He has regard to the condition of his Vines in summer, not in winter. He wants in most cases all the Grapes they can be made to bear and properly mature without exhaustion, and has the right to have them. Remembering this the gardener has to consider the best means to pursue for meeting the case. The Vines may be young or not; if they produce short-jointed wood and develop and retain good leaves quite to the base of the laterals, and the roots are under control, with fibres in abundance easily reached, close spur-pruning will do all that is needed so far as can be done with the knife in winter. There will be enough and to spare of the coveted clusters, and a choice can be made of the best formed and most promising for the crop; but there are other Vines, hundreds if not thousands of them, in various parts of the country in a totally different condition, and in consequence of this are not amenable to such close pruning, or at least if it is resorted to it leads directly and immediately to barrenness rather than productiveness.

Many years ago a young gardener who had been trained by a master in the art of Grape growing on the close-spur system of pruning was called upon to take charge of Vines, which he perceived, after careful examination, were in a very different state from those he had hitherto taken such pride in because of the splendid response they gave to the cultural means adopted. The latter were not young, but over twenty years old, with rods as thick as a man's wrist and as straight as rods could be. When pruned the spurs were mere knobs, not elongated, curled, and twisted contortions. They broke freely in the spring, and the laterals were short and rigid; fruit clusters showed often at the third and freely at the fourth joint, and the leaves were remarkable for their persistency close down to the spurs. The border was "like a mat" with roots, and these had the best attention. To have pruned those Vines on any other than the system adopted would have been something like madness, and if a change had been made it would have been the work of a quack and not of a genuine gardener. The results proved the method sound, and the object of both master and man was completely attained. What more natural that a pupil trained in such a school should have been prejudiced in favour of the closest of close pruning, and that he should have applied it to the much older Vines that came under his care during a September in the fifties, and which were carrying a miserable apology for a crop of Grapes?

He observed they had made growth enough, and were making it then, producing long-jointed extensions. He was told they always did this towards the end of the season, but made a bad start at the beginning. Roots were sought for perseveringly, but none could be found except main trunk roots black and fibreless, as if going in the direction of the antipodes. To have followed them to their extremities would have been very much a question of culvert digging and well sinking. The late growth, as has been said, was rampant, but it was observed that from over a length of 3 or 4 inches at the base of each lateral the leaves had long since vanished, and that the best buds there somewhat resembled small bad prickly Spinach seed, those next the spurs being mere specks scarcely visible. To such miserable abortions had the Vines been pruned, not absolutely close, but an inch or two added to the "spurs" yearly. The result was that these had curled into indescribably grotesque shapes, with the least modicum of organised matter stored in them through the absence of leaves.

The new gardener was clearly told the Vines must remain. They had done well for forty years, and he must make the best of

them. He was reminded that they were young in comparison with the Hampton Court Vine, and with one growing against an outside wall, and which bore plenty of Grapes on some parts, but they did not ripen. The "some parts" of the outdoor Vine were young parts that had issued after cutting back dying branches, not the sign of a bunch being visible on old spurred branches; yet the long thin laterals extended fast enough and far enough in the autumn, much in the same way as did those of the old Vines under glass. Here was a suggestive lesson. Nothing whatever was done to the roots of the under-glass Vines, at least that season, but a change of pruning was decided upon. Yet some caution was exercised. If it did not answer, the new gardener, by cutting the Vines differently, might cut short his own career, so he pruned one-third of them in the orthodox way, and two-thirds in an heterodox manner. He was regarded as a sort of heretic and quack by "friends" who called on him, and gave a grin such as critics can when they do not want to say anything uncivil. As may be expected, they called in the summer to see the "muddle," for that was the local designation of the departure, and scarcely knew what to say when they had to see next to no Grapes on the Vines "properly" pruned, and at least five times as many on those which had been "muddled." But the owner knew what to say and to do when the Grapes from his old Vines defeated all comers at the local show, for he raised the gardener's wages.

The young gardener then, as modestly as he could, ventured to record his experience in the Press for the benefit of others, and was pretty well "roasted." His narration was somewhat in this form:—"Half or more of the old spurs—the worst—were sawn off and the cuts pared, the rest of the laterals thinned, the worst removed, the best retained, and these trained up the old rods, and shortened where the wood was the firmest and the bud the roundest, taking care that it pointed in the direction where there was room for the growth to extend. The rest was a question of disbudding to prevent crowding, an important matter, and the change proved a great success."

The following year the Grapes were better than ever, new roots were then induced to push from the old, also from the collars of the Vines, young rods trained in where there was room, and by following out the system of pruning to the best buds, spurs or no spurs, full crops of fine Grapes were borne by the old and once "worn out" Vines for twenty years. The young practitioner thought in his zeal at the time the method he practised was new, but he lived long enough to find it was very old (much older than the spur system), and was delighted when he found it was substantially adopted by the famous grower of Grapes—and winner of prizes for them—the late Mr. Henderson of Cole Orton. Nearly twenty years ago the same once young gardener alluded to found the roof of a friend's vinery covered with the growths of an ancient Vine. It was closely spurred yearly, and bore a dozen or two of 2 oz. bunches. The pruning was changed on the lines suggested, more and better Grapes following the next three seasons than had been produced during the previous ten years all put together, nothing whatever being done to the roots of the old Vine. The change was described at the time, and the narrator was "roasted" again, but he did not mind, especially as some of the roasters learned by experience, and happily lived to advise similar methods in making the best of old Vines that could not be removed, and the roots of which were practically beyond the control of the cultivator.

A year ago the same watchful "young" man read of some such departure as above indicated being successfully made, not for the first time we may be sure, by a gardener whom no man living who is himself competent, dare whisper a word as against his genuineness. He has won his way by sound knowledge, high attainments, and excellent work to his present commanding position—Mr. Owen Thomas of Frogmore. Even in such a garden houses of old Vines cannot be cleared till young ones are

established for meeting the demand of from 20 lbs. to 80 lbs. or more of Grapes for one dessert. A number of Vines, mixed varieties, in a large house had done their duty well for many years on the close spur system, but gradually waned. They were retained to do what they could. At the 1892 pruning the system was changed: the best and not the worst parts of the wood chosen for bearing. In 1893 the crop was quadrupled. "Yes, but what of next year?" might be naturally asked by the spur adherents. If they could see the house at this moment they would find it full of Grapes from base to summit—such a crop as it would have been absolutely impossible for either Mr. Thomas or anyone else to have produced if the Vines had continued to be worked on the close spurring system. The increase in yield through the change is tenfold, and, in truth, a great deal more—a splendid reward for the departure from hackneyed methods, as dictated by sound judgment based on true scientific principles as applied to these particular Vines.

When the visitor who knows good work in gardening passes through the long fruit range at Frogmore he will see a good deal to admire, but will have to make a long pause when he enters the Foster's Seedling house, put on his considering cap, and wonder why and how it is that such a grand crop of Grapes can be produced by such a Vine. It is said to be thirty years old, and is planted close to the back wall in what seems to be a foot wide border. On reaching the top of the wall the Vine branches right and left, and from the horizontal rods others are trained down the roof at 4 feet intervals. The house is 60 feet long. The bunches, from top to bottom and end to end, are uniformly good, and the berries remarkably fine, dozens of the handsome clusters being of exhibition quality. That the Vine is rationally pruned and has the best of attention goes without saying, but no one seems to know where the roots have wandered. It is doubtful if another Foster's Seedling Vine and its crop can be found to equal this in the Queen's dominions.

There is also another Vine within reach—the monarch of all in Her Majesty's possession—the grand old centenarian at Cumberland Lodge. A drive thereto through the famous "Long Walk," thence down the Rhododendron avenue, and past beautiful Virginia Water, is very delightful. The old Vine seems as if it were being made younger, as it is certainly stronger than it was last year. This is due in part to the rational pruning on the lines suggested, and partly to a successful attempt of drawing a new layer of roots from the gigantic stem. Some of the extension growths from the old veteran are like those from young Vines, and if it should come to pass that an additional roof be provided for the famous Vine to cover, then would the Queen undoubtedly possess the finest Vine in Britain, and Her Majesty's loyal subjects in the domain of horticulture would rejoice in the Royal acquisition.

In the foregoing remarks let no one jump to the conclusion that the close-spur method of pruning Vines is condemned as a system. It is just as rational as any other for Vines to which it is appropriate, and which prove its soundness by the splendid results that are seen over the length and breadth of the land; but when Vines through age or local circumstances are no longer amenable to the orthodox method of pruning to force it on them is irrational if the object in view is the production of fruit. That the same method of pruning is not equally applicable to all varieties of Grapes and all kinds of Vines is certain. The change of methods with the results at Frogmore and other places prove the point to demonstration, and the facts may be usefully recorded.—*EXPERIENTIA DOCET.*

P.S.—Mr. Thomas merits congratulation on his work at Frogmore, though he would be slow to admit it, and if he could be said to be open to the charge of being proud about anything, it would perhaps be on a night's activity in dodging the frost. On a memorable occasion not long ago—a night of serious loss to many—he was on the alert, watching the indications of the

thermometer and barometer. Seeing the coming danger, all hands within reach were summoned at 10 P.M., and working with a will till the dawn of day. Two acres of Strawberries were covered with litter, also an equal breadth of early Potatoes, with everything else in jeopardy that it was possible to protect, and thus for an outlay of £3 in overtime produce was saved to the value of £100 at least, and probably a great deal more—a good night's work. Some Potatoes that could not be covered were levelled to the ground, and exposed blossoms of Strawberries were ruined.

NATURALISING FLOWERS.

INCREASING needs of an ever increasing population are by force of circumstances bringing into prominence the resources of the soil. Divulgence of light by scientific teaching and practical demonstration appears to mark a new era in English history. Happy is the nation, whilst reposing in its strength, able to pay attention to the arts of peace, for "Peace hath her victories no less renowned than War." The changed and ever changing conditions of life bring in their train new demands, and cause the luxuries of a past generation to become necessities of the present. A sign of the times in the new order of things is the results already obtained by energy and perseverance rightly directed by skilled teachers. But who will measure the extent or calculate the benefits of those refining influences which are inseparably connected with horticultural teaching? Some persons, by a straining of mental vision, can perhaps in the future see England as one vast garden. Others may see farther, and anticipate a time when the good work will be carried into Ireland. May it be so; there is room.

I feel constrained in these thoughts on our wild flowers to approach the subject by this allusion to that horticultural teaching, and to those far reaching influences which must indirectly, yet I think not less surely, result from it; otherwise I may be set down as a visionary. To say that our food supply is a matter of the first importance is but a truism. High pressure of modern life, forcing us to keep pace with the times, no longer tolerates a haphazard system of culture. This higher education must tend to a love of the beautiful in Nature; then that becomes in some degree also a necessary to us, with the accompanying desire to preserve, not to destroy; to add to, not to diminish what is for the gratification of all.

In a general survey of our native flora, no invidious comparisons need be drawn with the luxuriance of tropical growth and its gorgeous inflorescence. Geology shows that our country has also had a richer growth in prehistoric times. Our concern is with what we have now, how to keep it, and by such means as may present themselves add to the beauty of what we may venture to describe as Nature's garden.

The serious objection to any practical philanthropic views lovers of Nature may have is that passion for possession investing the plant-hunter so fatal to the more rare or interesting of our British plants. The light of the Press has of late been brought to bear on these dark deeds, and as exposing an evil paves the way for a remedy some means may thus be found to the desired end. We may at least hope that by spreading the light of advanced horticultural knowledge, a love and interest in our wild flowers may be inculcated which will afford them protection. Moral suasion may do more than the magic circle of an Act of Parliament, could such be drawn around them. Love is a more powerful agent than fear, although it has been recorded that an amateur kept his hardy fernery inviolate by an ominous notice of "Trespassers beware! Polypodiums and Scolopendrium are set here."

Prompted by love, and undeterred by fear, need we, may I ask, be quite so jealous of keeping all within the garden walls? "Stone walls do not a prison make, nor iron bars a cage," at least in this case they need not. May not some of these children of Nature of the Romany type be allowed to go into the world outside and roam at their own sweet will, to grow and blow unattended, yet admired and enjoyed by all? As an initial step in this direction I would suggest that any spare seeds might be devoted to the purpose. In most gardens, large or small, the annual sweepings of the seed cupboard would provide a bag of "mixum gatherum," and an occasional walk abroad would give facility to sow a few on this sunny bank, or that bare stretch of ground; by the wayside, on the hillside, or wherever our peregrinations lead us. An Utopian idea I fear is the comment, or what our Transatlantic cousins call a little too previous. The latter may be yet, I think, worthy of consideration to him "Who in the love of Nature holds communion with her visible forms."

I must acknowledge these thoughts have arisen from a few remarks dropped by a young gardening friend, who told me his chief had been sowing certain seeds on a certain hill. What they were I do not remember, nor if the weight was pounds or ounces, but I thought the idea was a peculiarly happy one. Henceforth my little surplus stock shall go forth into the outer world to do or die, and perchance I may from a few stray sowings reap the pleasure of seeing some Snapdragons, Forget-me-nots, Sweet Williams, and others so well able to multiply and replenish without our aid, blooming in the locality.

Having gone thus far I venture to proceed, and suggest that a few basketfuls or barrowloads of the trimmings and weedings out of those ubiquitous plants of our borders, plants suggesting suitability by their superabundant growth, might too be trundled out to Nature's domain and roughly planted. This Utopian gardening might not prove an all-round success, but in the survival of the fittest will some additions be made to natural floriculture.

Perhaps the day will come (it may not be distant) when the rising generation will be taught in our schools to love and cherish wild flowers, and also taught that a frond, a flower, or a spray are to be the only tribute levied from Nature's garden, where, as wild children of the universal mother, they are happy, fair, and free, a condition not attainable with these plants under prim culture.—E. K., *Dublin*.

ECONOMICAL MANURING.

MUCH interesting and instructive information has been conveyed in several articles which have appeared in the discussion on the "Nutrition of Roots." Is it not time that some practical deductions be elicited, in order that the subject introduced by Mr. Raillem may be of substantial service to cultivators? The gist of the matter from the cultivator's point of view appears to be this. Mr. Raillem implies, but has not said, that the best way of supporting crops is to bury the manure deeply, say 2 feet, or a foot under the roots of whatever may be planted above it, and rely on the virtues of the manure being brought up to the roots in and by the rising moisture. If that is the best form of manuring it means in his view that there must be less waste of plant nutriment than if the manure, or some of it, were applied nearer or on the surface, according to Nature's method of replenishing the earth.

On the contrary, "A. D.," who is almost the only writer who has given a practical "turn" to the discussion on root nutrition, is clearly in favour of surface manuring, which he says, is "practically most successful," going on to remark "and a long way more useful than scientific arguments." That is, perhaps hardly, I will not say a fair, but a full, way of putting the case, for surely some at least of the scientific arguers are workers as well. Let us then be shown the real usefulness of their scientific knowledge as represented in the methods they adopt as founded on such knowledge.

It is of no use arguing on the truism that moisture rises through the soil any more than it sinks through it. The real question is this:—Does the rising moisture bring up more plant food from deeply buried manure for imbibition by roots than is carried down to them by the rains from manurial applications on or in the upper layer of soil? Mr. Raillem seems to believe in the manure burying theory even if carried out to a depth of 4 feet, or why the reference, as illustrative of its soundness, to the bulb-growing in Holland? I do not know that all the manure, even for growing Dutch bulbs, is buried so deeply, and should be inclined to doubt it. However, your correspondent appears to think it is, and that it is the right method for crops generally in this country; at least I have not noticed his advancing any exception, or in fact anything whatever to the contrary.

It will hardly be disputed that the best method of enriching the soil is that which entails the least cost in material and application, and which also involves the least waste in nutritive elements. If Mr. Raillem will accept that definition I shall be inclined to take sides with "A. D." if he will say that burying all the manure that may be used even 2 feet from the surface and trusting to the rising moisture to bring its virtues to the roots of plants and crops is not the best but the worst system that can be adopted, because the most laborious and wasteful.

I have observed that one of your correspondents does not like pseudonyms, but that is, perhaps, only when writers who use them are opposed to his views. I hope Mr. Raillem is not so particular, but will have regard to arguments only, whether as founded on science or practice or both, and this being so he will not mind what *nom de plume* is used in this case, so it may as well be—NAILLEM.



ODONTOGLOSSUM CRISPUM BARONESS SCHRÖDER.

MANY choice forms of *Odontoglossum crispum* have been exhibited of late by Mr. Ballantine, gardener to Baron Schröder, The Dell, Egham, and a few more additions to the list were shown at the Drill Hall, James Street, S.W., on the 12th inst. These included the unique variety *O. crispum* Baroness Schröder, depicted in the illustration (fig. 80). This is not remarkable for its size but for the colouration of the flower. The sepals and petals are a reddish purple colour, with the exception of white mark at the base and light margin. It is probably the richest coloured form that has ever been exhibited, and is worthy of the first-class certificate awarded by the Orchid Committee of the Royal Horticultural Society on the above mentioned occasion.

ORCHIDS AT FAIR OAK LODGE.

FAIR OAK LODGE is the residence of W. A. Gillett, Esq., and is situated three miles from Eastleigh Junction on the main line to Portsmouth and Southampton from London. A really good collection of Orchids has been brought together by Mr. Gillett, who is very fond of these plants, and is ably assisted by his gardener, Mr. E. Carr, to cultivate them. The month of June is not a good time to find houses full of bloom, but sufficient were open at the time of my visit to interest anyone.

Dendrobium McCarthiae, *D. Phalaenopsis* Schröderianum, *D. Jamesianum*, and *D. Parishii* were well represented. Mr. Gillett is particularly strong in *Cattleyas*, such as *C. Mossiae aurea*, *C. M. superba*, *C. Mendelli*, *C. imperialis* (extra good form), *C. Forbesi*, and *C. labiata* Gaskelliana, all of which were well worthy of inspection. *Odontoglossums* are represented by excellent forms of *O. vexillarium*, one plant having sixty blooms open at one time; *O. tripudians*, extra good form; *O. Pescatorei*, *O. cordatum*, *O. Harryanum*, *O. maculatum*, *O. citrosmum*, very deep rose tint; *O. c. grandiflorum*, *O. hastalabium*, and *O. polyxanthum*, extra large.

An excellent form of *Cypripedium niveum* was also in bloom, the pale purple spots contrasted so finely with the pure white base of the flower. *C. caudatum* was both interesting and pretty, and good forms of *C. Lawrenceanum* and *concolor* were to be seen. *Thunia Bensoni* and *T. Marshalliana* added variety in colour. A fine specimen of *Laelia purpurata* was noticeable, and had been exceedingly well flowered, a bloom remaining to show the quality of the variety. *L. grandis*, too, was good in form.

Oncidium Lindeni and *incurvum* were producing stout healthy flower spikes. *O. concolor* was decidedly pleasing; its soft yellow blossoms find many admirers. A fine stock of *Masdevallia Harryana* promised well for future flowering. *Epidendrum vitellinum majus* was really a grand form of this showy Orchid. The above kinds are but a few of the many Orchids which have been collected during recent years, but they are enough to show that this branch of horticulture receives attention. All the plants reflect credit upon their custodian.—E. M.

ORCHIDS AT WESTMOUNT, KELVINSIDE, GLASGOW.

THE display of *Odontoglossums* at Mr. Steven's above mentioned residence is perhaps the most notable in the West of Scotland. Visiting Westmount recently I counted more than a hundred developed spikes. Many of the blooms were over 4 inches across, and of great substance; most of the spikes carried sixteen blooms, none less than a dozen. A pure white form, well named *O. virginialis*, measured nearly 5 inches. Others were of the *guttatum* type, one called Wilson's var. being very finely spotted on both sepals and petals. *O. cristatellum* was in fine condition, carrying a very large spike of finely marked blooms. *O. Wilckeanum* had flowers 4 inches across, of great substance and grandly marked. All the very finest forms are here, not small plants for the sake of variety, but large specimens filling 10 and 12 inch pots. The foliage is strong and green, bearing striking testimony to the skilful manner in which they are managed by Mr. David Wilson the gardener.

The house in which they are grown is no doubt well adapted for successful culture. It is span-roofed, standing north and south, the east side having a wall instead of glass uprights, so that the morning sun which often does harm cannot reach the plants till someone is sure to be about. Mr. Steven is an ardent admirer of

Odontoglossums, and in a few years has collected about a thousand plants, six hundred of these being flowering specimens which he grows chiefly for distribution among his friends, thereby spreading the knowledge and love of Orchids very considerably. The marvel is that so few persons cultivate cool Orchids; no plants give a better return for the money invested, and they are not like many plants that depreciate in value as they grow older. The collection of Orchids is not confined here to cool species, several houses containing many of the best type of *Dendrobiums* and *Cattleyas*.—R.

ORCHID JOTTINGS.

LIKE many more visitors to the Drill Hall on the 12th inst. I was surprised to find such a grand display of Orchids on that occasion. It is usual to see a falling off in numbers if not in quality the first gathering after the great Temple Show, but this year has proved an exception to the rule. Apparently both trade and amateur orchidists are bent on maintaining the reputation they have long held in respect to the Royal Horticultural Society's meeting, for their exhibits certainly increase as the time rolls on. At the last meeting I was informed that the "business of the Orchid Committee was one of the heaviest on record, there being nearly 100 exhibits to be adjudicated upon." There seems to be some truth in this, for the large building was well filled; not perhaps with Orchids, but these were more numerous than usual. It is curious to note that when other societies hold their special exhibitions in the Drill Hall that a much larger number of general exhibits is forthcoming.

On the occasion mentioned the exhibits were in some instances crowded to such an extent as to make it quite possible for any ordinary observer to overlook some of the choicer kinds of Orchids that were staged. It is not probable, however, that anyone missed the beautiful *Phaius Owenianus* which secured Messrs. F. Sander and Co. the first prize for the best new hybrid Orchid of 1894. As before mentioned in these pages, this novelty was also exhibited at the Temple Show, there awarded a first-class certificate; and, moreover, was illustrated in the *Journal of Horticulture* for June 7th.

As is customary, Messrs. J. Veitch & Sons, Royal Exotic Nursery, Chelsea, sent a group of choice and new Orchids, including three charming hybrid *Masdevallias*, for which awards of merit were adjudged. The most showy of these was perhaps *M. Parlatoresana*, this being the result of a cross between *M. Veitchii* and *M. Barlaeana*. The flowers are a deep orange scarlet shade suffused with purple, and are borne on stout stems. The plant appears to be a free grower, the same also applying to *M. glaphyrantha*, which is distinct, but not quite so attractive as the last-named. *M. asmodia* was the name of the other hybrid, this being the result of a cross between *M. chelsoni* and *M. Reichenbachiana*, also known as *M. Normani*. From the same firm came the new *Disa langleyensis*, that has already been described in these columns, and for which a certificate was granted some weeks since.

Having previously referred to Baron Schröder's *Odontoglossums*, it appears superfluous to mention again the fact of this orchidist possessing perhaps one of the finest Orchid collections in the kingdom. Such, however, is the case, and it would seem that Mr. Ballantine has yet an inexhaustible store of floral treasures. Scarcely a meeting of the Royal Horticultural Society passes without a few rare gems being sent from the hothouses at The Dell, Egham, and on the 12th inst. first-class certificates were adjudged for two forms of *Odontoglossum crispum*, and an award of merit for another. One of the former, *O. c. Baroness Schröder*, is illustrated and described in this issue, and therefore it is needless to say anything further about that form. But the others? One of those honoured with a first-class certificate was appropriately named *O. c. grande maculatum*. It is truly a "grand" form, the flower being nearly 4 inches across, stout in texture, and well spotted. *O. c. mirabile* is the form for which an award of merit was granted, this variety being of a distinct and pleasing nature.

Writing about *Odontoglossums* calls to mind the fact that Mr. De Barri Crawshay must have a charming collection of these popular Orchids at his Kentish residence. Generally this gentleman contributes largely to the meetings of the Royal Horticultural Society, and on many occasions has shown some most beautiful forms. The plants, moreover, are always well grown, and profusely flowered. A very fine variety of *Odontoglossum citrosmum* was exhibited by Mr. Crawshay on the 12th inst., and it attracted more than ordinary attention. The sepals and petals were creamy

white, the lip being pale lavender. The Rosefield varieties of *Odontoglossum crispum* are also well known for their beauty. —SPECIALIST.

BRITISH ORCHIDS.

AMONG the many species of Orchids that are contained in our native flora there are several well deserving a place in gardens. Hardy plant borders, rockeries, and shady positions under trees where little else will thrive are all suitable positions for the various kinds, and very pleasing and interesting they are.

Orchis maculata is one of the finest hardy Orchids, and may be easily established by lifting plants now in flower with good balls of earth and transplanting them to the borders. This plant is not at all particular as to soil, being found wild in all kinds of positions. A good sound loam is, however, most suitable, and when once established in soil of this description it will gain strength every year. The fine spotted leaves and vigorous flower spikes produced under these conditions make this Orchid a truly ornamental border plant.

Orchis pyramidalis is another beautiful kind, the rosy pink pyramidal spikes of flower being very attractive. This species is not so common as the last named, but quite as easily grown though not so vigorous in habit. *O. conopsea* is a fragrant and pretty Orchid. The spikes are usually from 9 inches to a foot high, of a delicate mauve tint. The colour of this species varies a little in different localities. It grows best in a rather moist peaty soil, but the fact of its growing and flowering freely on chalky downs and fields as well as in marshy copses shows that it is not fastidious in its requirements.

O. mascula, the common early Orchis of our pastures, is greatly improved by cultivation. This species is very variable in colour, the tints ranging from deep purple to pure white. Large clumps of the pure white variety form most beautiful objects for the foot of a rockery.

The Bee Orchis, *O. apifera*, is becoming rare as a wild plant in many places, and is also one of the most difficult to cultivate. Very fibrous loam, peat, and sand with a few small lumps of chalk intermixed is the most suitable compost for this species. It must not suffer through want of water at the roots while growing, but in winter requires a fairly dry position. *Listera ovata* is a common and well known plant. The flowers are more curious than beautiful, being of a greenish yellow tinge. It usually flowers about the end of the present month.

I have never seen *Cypripedium calceolus* growing wild, although it is a native of this country. It can, however, be procured from nurserymen who make a speciality of hardy plants. The culture of this species is not difficult, as when once established on a shady border or rockery it soon increases. The crowns should be obtained while dormant, and planted from 4 to 6 inches deep in a light loamy soil.

Habenaria bifolia is one of the very few plants that will grow under Beech trees. The flowers are freely produced, and are very fragrant and pretty. Hardy Orchids of all kinds greatly dislike being disturbed, therefore replant as seldom as possible, and avoid breaking the brittle roots. A mulch of cocoa-nut fibre refuse or well decayed manure should be applied to the roots in the summer to conserve the moisture as much as possible, and in winter a covering of leaves is very beneficial.—H. R. R.

DECORATIVE BRITISH FERNS.

(Continued from page 447.)

NEXT to the pleasure experienced by the patient and successful Fern hunter when he succeeds in bagging some exquisite specimen of Nature's abnormal fancy work in the Fern way, must certainly rank that which he feels when, his acquisition being duly installed and cherished, spores result, and in course of time he has his reward in a harvest of young plants, among which he finds types of even an advanced character and greater beauty than the parental one. All hobbies, of course, have their individual attractions or they would cease to be ridden, but I venture to assert that the Fern hobbyist who finds or raises a surpassingly beautiful new variety has sounder reasons for his enthusiasm than can possibly fall to the fortune of any specialist whose "rare" and "unique" gems possess no other recommendation or interest beyond their rarity or uniqueness.

In the one case it is only too often the fact that no scintilla of artistic merit exists to justify the value set upon the acquisition. It may be a piece of hideous bric-à-brac of which all the rest of the brood were happily destroyed, one only unfortunately escaping; it may even be a scrap of dirty paper dignified with the name of a stamp, and elevated to the highest philatelic dignity because of a misprint which put all its companions *hors de combat* when the error was discovered, or it may be a thousand and one things of like merit. On the other hand, however, it is some subtle touch of Nature's hand alone which imparts the "uniqueness" and the beauty to the hunter's "finds," and not only this

but in the vast majority of cases implants within the ferny treasures the power of infinite multiplication, so that not merely the individual finder is the richer for the discovery, but he can, if sufficiently large minded, spread his satisfaction broadcast by enriching his friends as well. Nor, as we have seen, is this all, for by selective propagation for his new starting point, fresh developments may result, and the humble Fern of the wayside becomes the origin of a line of forms of truly regal beauty.

PROPAGATION BY SPORES.

To commence at the beginning, however, we must first consider the nature of the spore, and then how to treat it so that it may develop into the Fern. If we examine the backs of the fronds of adult Ferns, we shall as a rule find them partly occupied by circular uncovered heaps of spores, as in the Polypodies; by short lines on each side the midribs, as in the Asplenias; by larger and longer lines, as in the Hart's-tongue; or by covered patches, as in the Buckler and Shield Ferns; or the fronds may terminate in a panicle, bearing a distant resemblance to inflorescence, as in the so-called Flowering Fern or *Osmunda regalis*. Each species, in short has its own peculiar mode of arrangement, and it is indeed by the form taken by the fructification that the genera are determined. On closer examination with a lens it will be found that these dot lines are not merely spores, but consist of innumerable small, generally brownish, capsules, in which the spores are located; and just



FIG. 80.—ODONTOGLOSSUM CRISPUM BARONESS SCHRÖDER.

as when we sow Peas and Beans, we do not sow them in their pods, but shell them first, so when we design to sow Fern spores we take measures to have them shelled or shed as a first step in our procedure. By the end of June or early in July the spores of spring fronds are usually ripe, which may be ascertained by their capsules being brown. If now a frond be cut and laid between two sheets of paper in a dry place, in a few hours the paper will be found apparently stained with the same hue; but a strong lens will reveal the fact that this stain consists of countless myriads of microscopic oval bodies, which are the spores in question.

The next step is to take a somewhat shallow pot or pan, into which sufficient crocks are placed to secure drainage. The pot is then filled to within an inch of the rim with good ordinary Fern compost of loam, fine leaf mould, and sand, topped with small nubbles of the loam. This is pressed flat and fairly firm. Take then a kettle of quite boiling water, and after placing a small piece of paper on the surface of the soil to prevent washing up, thoroughly saturate the whole until the water runs away at a scalding temperature. By this means all worms, eggs of vermin, or spores of fungi are killed, and we have nothing likely to interfere or compete with the spores. The mistake is often made of merely soaking the soil with boiling water, which is not sufficient; the cold soil absorbs so much heat, that though the top may burn the finger, the effluent water will be only warm, and hence worms frequently escape; and eventually turn up the soil and spoil the crop. Cover the pan with glass, and let it cool. Then take the paper containing the spores, and carefully distribute them very thinly and evenly over the surface. Insert a label, re-cover with glass, and stand the pan away in some damp warm shady corner, where worms cannot reach it.

In the course of some fourteen days or so we shall see a faint greenish growth distributed over the surface, and with a glass will perceive that every spore is throwing out a thin bright green filament. This filament first lengthens and then widens, attaching itself by

numerous root hairs to the soil as it proceeds, until in a few weeks we have a mass of small heart-shaped green scales densely overlapping each other all over the pan. These scales are the "prothalli," and so far present no resemblance at all to Ferns, resembling rather very closely the Marchantia or Liverwort. At this stage, however, the Fern, wonderful to relate, is producing its flowers, the equivalents of which are formed on the under side of the prothallus, those of the pollen grains in small round bodies which are very numerous among the root hairs at the pointed end of the "heart," and those of the stigma and ovary in a small cluster on its indentation.

In another week or two, fertilisation having taken place, the tiny first fronds will be seen pushing up through the indentation of each prothallus until quite a crowd appears. At this stage, or even earlier, it is well to prepare other pans in precisely similar fashion, and prick out small patches of the prothalli an inch apart into them by making a small indentation in the soil to fit each patch. Thus aided, each patch spreads out considerably, and the young Ferns develop their second and third fronds before they need to be isolated and treated as individuals. If, notwithstanding all precautions, damping off sets in, which is one of the chief risks of sowing too thickly, this pricking out operation should be done at once, and is quite safe at any stage of prothallus life.

SELECTING CHOICE FORMS.

In selective culture we have now arrived at that interesting period when new characters begin to show themselves, and of course when anything well marked makes its appearance it is well to transfer it to a special pan. It very often happens that notwithstanding every care the crop, especially at the outset, is a puzzling one. We may have sown, for instance, some special Hart's-tongue, and Fern after Fern as it rises turns out to be an Athyrium or Lastrea, which to our knowledge we have not sown at all. This arises from two facts, firstly that the frond we started with was probably well peppered with the shed spores from its neighbours of other species, which of course became mingled at the sowing, and secondly, that some species develop much more quickly than others. In such cases, if the sowing be very special these strays must be carefully removed as they appear, and later on the real ones will duly assert themselves.

I remember on the occasion of my raising *Lastrea æmula cristata* for the first time I mowed down and cut out no less than three profuse crops of all sorts of Lady Fern before *L. æmula* showed itself, which it then did in such profusion as if nothing had happened. Yet, indubitably, had I not persevered all would have been choked out by their stronger growing companions. Colonel A. M. Jones at Clifton made a like sowing at same time, and reported to me that he had nothing but a crop of *Pteris cretica*, due as ascertained to the sowing being made in heat in a greenhouse, where doubtless spores of that Fern were introduced either by air or water. Selection now, as I have said, comes in, and all inferior or imperfect forms should be ruthlessly weeded out and destroyed. This is the more essential, as the crop from a single successful sowing taxes severely the accommodation of the ordinary grower; indeed years ago, when I was new to the cult, the late Mr. J. M. Barnes, of Lake District renown, told me that one of the painful elements in spore-raising was the feeling that many "good things" originate only to be lost in the crowd, that cannot possibly be reared. One point, however, he impressed upon me, and my own experience has confirmed it, that is that the best forms are often the latest in appearing, so that the after crop, as it were, of a special sowing should not be lightly thrown away. While Ferns are in the prothallus stage they must never become dry. If drought is threatened the pots or pans should be stood in tepid water until it just glistens on the surface. If, however, the pans be in a truly congenial place they will not become dry until the pricking-out period arrives.

PROPAGATION BY BULBILS AND DIVISION.

So much for spore propagation and selective culture, apart from which Ferns can be multiplied on a less extensive scale by bulbils and by division. Bulbils are found on the fronds of some of the varieties of *Polystichum angulare*, and also on the Hart's-tongue, especially such conglomerate forms as *Kelwayi*, *Coolingi*, and *Wardi*. O'Kelly's *S. viviparous cristatum* has a power of throwing little clusters of plants on the face of its fronds, as also has *S. v. proliferum*. The *Polystichums* in many cases bear bulbils sparsely in the axils of the basal pinnae, and in the proliferous section produce them in great numbers all the way up the fronds. These soon take root if the fronds be layered in open compost. The Hart's-tongue bulbils should be cut off with a half-inch tongue of the frond itself, the said tongue being inserted in the soil so that the bulbil is just level with the surface; they then speedily develop roots and establish themselves.

Such Ferns as the *Polypodies* and others whose rhizomes ramble and produce the fronds singly, are very easily propagated, every piece of root bearing a frond and growing tip being practically an independent individual, and only requires separation and installation to assert itself as such. The Shuttlecock order of Ferns, such as *Athyrium filix-fœmina*, the *Lastreas* and *Shield Ferns*, not only produce offsets more or less freely by external growth but also frequently divide centrally, their crowns forming two axes of growth, which in time spread apart and can then be severed asunder with a sharp knife, each coming away with its own roots as a full grown specimen. The fund of vitality in Ferns is indeed inexhaustible, and it often happens that when the centre is accidentally destroyed latent buds develop all around it from the frond bases, and instead of one we have a crowd. As

an astonishing instance of persistent vitality I may mention one case in my own experience which seems incredible, but for which we can vouch. Some pieces of a special *Polystichum angulare*, a variegated form, were severed and inserted in sandy soil and then forgotten or neglected for three years and a half. The pot then came into my possession, and incipient buds being observed by a lens the pieces were repotted, and in a few weeks fifteen plants came up, most of them pure white, two alone eventually surviving. Half-inch cuttings of the bases of Hart's-tongue fronds just inserted in sandy soil in a month or two develop several plants apiece, but in all these cases of mere division further variation is too rare to be looked for, and hence one of the most fascinating features of Fern reproduction is practically non-existent.—CHAS. T. DRURY, F.L.S., F.R.H.S.

(To be concluded.)



ROSE SHOW FIXTURES IN 1894.

- June 26th (Tuesday).—Westminster (R.H.S.).
- " 27th (Wednesday).—Windsor (N.R.S.) and Richmond (Surrey).
- " 28th (Thursday).—Canterbury, Eltham, and Sutton.
- " 30th (Saturday).—Sittingbourne and Brockham.
- July 3rd (Tuesday).—Farningham, Bagshot, and Diss.
- " 4th (Wednesday).—Croydon, Reigate, Tunbridge Wells, Ealing, Ipswich, and Lee.†
- " 5th (Thursday).—Hereford, Norwich, and Bedford.
- " 7th (Saturday).—Crystal Palace (N.R.S.)
- " 10th (Tuesday).—Gloucester and Wolverhampton.*
- " 11th (Wednesday).—Hitchin and Ulverston.
- " 12th (Thursday).—Bath, Harleston, Woodbridge, and Worksop.
- " 14th (Saturday).—New Brighton.
- " 17th (Tuesday).—Helensburgh.
- " 18th (Wednesday).—King's Lynn.
- " 19th (Thursday).—Halifax (N.R.S.), Halesworth, and Trentham.
- " 21st (Saturday).—Manchester.
- " 24th (Tuesday).—Tibshelf.
- " 26th (Thursday).—Southwell.
- " 28th (Saturday).—Bedale.
- Aug. 1st (Wednesday).—Chesterfield.

* A Show lasting three days. † A Show lasting two days.

Any date of Rose shows, or of other horticultural exhibitions where Roses form a leading feature, not named above, I shall be glad to receive as soon as fixed, for insertion in future lists.—EDWARD MAWLEY, *Rosebank, Berkhamsted, Herts.*

ISLE OF WIGHT ROSE SHOW.

AN Exhibition of Roses was held under the auspices of the Isle of Wight Rose Society at Shanklin, yesterday (Wednesday), and the following are the results of the competition in the principal classes.

For twenty-four blooms, distinct varieties, Mr. Ben. Cant was first, Mr. Frank Cant second, and Messrs. Paul & Son third. In the class for twelve reds, Mr. Frank Cant was first, Mr. B. Cant second, Mr. R. E. West and Dr. Seaton equal third. Trebles: Mr. Ben. Cant first, Mr. Frank Cant second, and Messrs. Paul & Son third. For twelve blooms, one variety, Mr. Frank Cant was first, and Mr. Ben. Cant second. In the class for garden Roses Messrs. Paul & Son were first, Mr. C. E. Cuthell second, and Mr. Frank Cant third.

The medal for the best Rose in the Show led to a very close contest. Mr. Frank Cant won with *Comtesse de Nadaillac*; Mr. B. Cant following very closely with a splendid bloom of *Madame Cusin*. The Rev. G. E. Jeans won the championship of the island and the cup for thirty-six Roses. Mr. Jeans also won the medal for the best amateur's Rose, staging a bloom of *Madame Bravy*.

ROSE SHOW IN DUBLIN.

THE Royal Horticultural Society of Ireland will hold a Rose Show on July 5th in the pretty grounds attached to Lord Iveagh's Dublin residence. The principal trophy, to be competed for by amateurs, is a challenge cup valued at £24, presented by the horticultural seed trade of Dublin, for the best thirty-six blooms in not less than eighteen varieties.

NATIONAL ROSE SOCIETY AT WINDSOR.

As mentioned last week, page 469, through the kind intervention of the President of the Society, the Very Rev. the Dean of Rochester, Her Most Gracious Majesty the Queen has been pleased to give permission for the members of the Society to visit the Royal Gardens at Frogmore on Wednesday, June 27th, when the Society will hold its Southern Exhibition at Windsor under Her patronage. We also believe that Mr. Owen Thomas will conduct the members through the gardens. Particulars will be posted in the tent on the morning of the Show.

NATIONAL ROSE SOCIETY'S METROPOLITAN EXHIBITIONS.

I HAVE much pleasure in sending the accompanying short table in reply to Mr. Grahame's inquiries in the last issue of the *Journal of Horticulture* :—

YEAR.	WEATHER.		No. of Blooms ("Garden" Roses not included).
	MAY.	JUNE.	
1887	Very cold and rather wet	Very warm and very dry	5430
1888	{ Average temperature and very dry }	Cold and rather dry ..	5550
1889	Very warm and very wet	Very warm and very dry	5650
1890	Warm and very dry ..	Cold and rather wet ..	6100

The description of the weather may be taken as of that prevailing in the neighbourhood of London.—E. M., *Berkhamsted*.

NEW ROSE MRS. W. J. GRANT.

I DID not know, when writing last week, that Messrs. Dickson were unable to send out this Rose this year. It is a pity that we cannot obtain it yet; but it will give an opportunity for an expression of opinion at the general meeting of the National Rose Society as to the suggested change of name, and I hope a strong one will be forthcoming.—W. R. RAILLEM.

ROSE SAFRANO.

It would indeed be difficult to name a Rose that is more appreciated for the early buds that it gives us from the open wall than this variety. In the majority of catalogues the colour is described by one word—fawn—which barely does it justice. There is a certain bronzy hue which seems to brighten the half-opened buds as to render them so distinctly pleasing. I am surprised more plants are not grown against low walls or screens, where the slightest protection is sufficient to give good returns.—E. M.

THE EARLY ROSE SHOWS.

It is somewhat unfortunate that two of our chief early Rose Shows—Windsor and Richmond—should fall on the same day, Wednesday, the 27th inst. The latter Show, which is perhaps one of the easiest of access, and held under the most enjoyable of conditions in the old Deer Park, was for some time the leading first early Rose Show in the south. It would have been an easy arrangement for the National Rose Society to have incorporated its early Show with Richmond, and thus have made one specially grand display rather than have divided the attraction.

It is now too late to amend the defect, but I cannot doubt but that the Richmond authorities would gladly welcome the National Rose Society another year. The place is singularly convenient of access for rosarians generally. Those now who want to have a good Rose feast may if they choose do both Windsor and Richmond, as both lie on the South-Western Railway. The Richmond ground is just five minutes' walk from the Railway Station. The Show will be opened by H.R.H. the Duchess of Teck, and there is certain to be, as is always the case, not only a fine company, but also a most attractive Exhibition.—A. D.

ROSES AT YORK.

AS I was not present at that exhibition it may perhaps be asked why should I mention it. I might perhaps, indeed, "evolve out of my own inner consciousness" a vivid description of the exhibition, knowing who were the exhibitors and what are the varieties they especially favour. I might tell what splendid blooms there were of this or that Hybrid Perpetual, how grand were the Teas of such and such an exhibitor, and so on, but I forbear. I have, however, one especial object in referring to it. For some time I have warned our "big men" in the professional class who had been carrying off the triumphs of victory for so many years that there was a "disinherited knight" of whom they would have to take account in the future tournaments that are held in honour of the queen of flowers. I do not think they believed me; they had only seen small exhibits coming from him, and while they had seen many large growers with double and treble his number of plants still holding back and only exhibiting in the smaller classes they smiled contemptuously at the thought of a little knight like that entering the lists with them. However, far sooner than I anticipated, my predictions have been realised.

At the York Show Mr. George Mount, of whom I write, suddenly leaped into the front rank, for the first time he exhibited in seventy-twos and in that class and also in those for forty-eights, twenty-fours, and eighteens he literally swept the board, carrying off all the first prizes in those classes. But then, it may be said he had no competitors worthy of his steel. "Hadn't he, though!" He had two champion growers—Messrs. Harkness & Son and Mr. Frank Cant, beside others. Now I look upon this as a fact unprecedented in the annals of Rose showing. I mean this: never do I recollect an exhibitor for the first time entering in these large classes and carrying off everything before him. We must bear in mind, too, that they were beaten—two at least—in their own county, while Mr. Mount had to bring his Roses from the far South of England. We well know what an advantage it is to be able to gather flowers close at home and to bring

them only a few miles instead of having to subject them to a night's travelling by rail and all the other disadvantages attendant upon a long journey. I did not think when I wrote the other day my notes on Mr. Mount's garden I should so soon have to congratulate him on his wonderful success, and for his sake and for the honour of the old city I heartily rejoice. There is one more pleasant thought connected with it, namely, that I believe this feeling will be shared by all rosarians, and that even those whom he has beaten will be among the first to congratulate him.—D., *Deal*.

ROSES AT THE COLCHESTER SHOW.

THE meeting of the Colchester Horticultural Society was this year arranged so as to coincide with that of the fixture of the Essex Agricultural Association—viz., the 13th and 14th inst. Having been asked to judge flowers at this meeting I willingly availed myself of the invitation, more especially as I have hitherto known Colchester merely by the great reputation its rosarians have given to it. The day was as unpropitious and depressing as in contrast thereto the meeting was satisfactory, and the hospitality of my rosarian friends profuse and exhilarating. The show was held at Lexden Park, and the arrangements of the horticultural parts thereof were under the supervision of Mr. Andrews of Woodbridge, who deservedly has a great reputation in the county, as also in Suffolk, for his knowledge of such matters, and who on the present occasion, and under depressing circumstances, worthily maintained his position as an expert.

Roses were not shown in profusion, but such as were exhibited would have fairly held their own at any meeting, more especially the Teas staged by the various winners. The competition was keen between the two great rivals, Messrs. Benjamin R. Cant and Frank Cant, who ran each other neck and neck in the three classes open to them, Messrs. Prior & Son being third. For thirty-six varieties Mr. B. R. Cant was first, in his exhibit being especially good flowers of Cleopatra (which was awarded the medal as the best Rose), Marie Van Houtte (very good specimen), Madame Gabriel Luizet, La France, Madame Cusin, Viscountess Folkestone, Souvenir d'Elise, Susanne Rodocanachi, and Général Jacqueminot. Mr. Frank Cant was second, his best flowers being Rubens, Madame Montet, Souvenir d'Elise, Marie Van Houtte, Crown Prince, and J. D. Pawle.

For twenty-four varieties Mr. Frank Cant was first, showing a very even, fresh coloured, and well arranged box, in which the best flowers were Dr. Andry, Souvenir de S. A. Prince, Charles Lefebvre, Madame Montet, Crown Prince, Général Jacqueminot, Prince Arthur, and Rubens. Mr. Benjamin Cant was a good and close second, his best flowers being Gustave Piganeau, Cleopatra, Gabriel Luizet, La France, and Madame Cusin. Messrs. Prior & Son were third, showing neat flowers of Souvenir d'un Ami, Marie Van Houtte, Général Jacqueminot, Cleopatra, and Augustine Guinoisseau.

In Teas Mr. Frank Cant was again first with Souvenir d'Elise, Madame de Watteville, Catherine Mermet (very good flower), Rubens, Madame Lambard, Marie Van Houtte, and Maréchal Niel. Mr. Benjamin Cant was second, showing Cleopatra, Madame Cusin, Souvenir d'Elise, Niphetos, Souvenir d'un Ami, and Marie Van Houtte. Messrs. Prior third, with neat flowers of Catherine Mermet, Niphetos, Rubens, and Cleopatra.

The amateur exhibits were not of the standard which one looks for amongst our crack growers, but considering the weather one cannot criticise in the same way as if the season had not so completely changed in character since the 15th May, Roses showing the effects of the recent dismal rains and other untoward climatic difficulties. Mr. Berners, however, showed a very good box of twelve Teas, which although not of his exceptionally high standard, were still flowers which most of us would be proud to be able to stage in such a wretchedly disappointing year as this so far has proved to many of us. As in the professionals' boxes the best flowers were Cleopatra (which obtained the amateurs' medal) and Catherine Mermet, The Bride, Niphetos, and Souvenir d'Elise. Mr. Tasker's gardener brought from Brentwood some even, but small sized, flowers, which gained him two firsts for twenty-four varieties (no other competitor), and for six Teas, one variety. In the latter class he staged Souvenir d'un Ami, good flowers, but arranged with no moss, which gave rather a crude appearance to his box. Mr. Harcourt Landon, the new recruit to the strength of the N.R.S. Committee, sent some good flowers of Marie Van Houtte, which were well arranged, and worthily obtained a good second. Mr. Landon also got first place for twelve varieties in the class of growers under 500.

Other exhibitors worthy of special mention were Mr. George Paul, who sent three beautiful boxes of garden Roses, and was strongly recommended for a good special prize, there being, unfortunately, no class reserved for such flowers, an oversight which will probably be rectified in the future, as at this time of year garden Roses are specially good, and should be in all Rose schedules.

In the same way Mrs. Arthur Cant of Reed Hall, Colchester, sent a beautiful box of six Teas, distinct varieties, for which there was no class, but which my colleague (Mr. Burrell) and I considered of the highest excellence, and recommended for a special prize.

Being within easy reach of the most celebrated professional growers in the south of England I naturally availed myself of the invitation given me to see both the Messrs. Cants' Rose gardens, and I may say that the reality of these grounds far exceeded my anticipation thereof. I have been in many nurseries of various sizes and reputations, and was delighted with the excellent way Roses are here cultivated.

Comparison between these gentlemen's grounds, their methods of

cultivation, and their plants would naturally be both invidious and unfair, nor should I dream of making it; but I came to the conclusion that if the Rose plants of each continue in the same satisfactory, I may say magnificent, condition that they were in on the 13th inst., the contest at the Crystal Palace between them on the 7th July will be a sight fit for the gods. That it will be a close one we can fairly judge of by the preliminary set to at the Colchester Show, when the running and results were of an in and out character; but that your readers will certainly see flowers of the highest excellence, and equal to anything hitherto exhibited at the meetings of the N.R.S., they may confidently expect. If the weather be only fairly propitious, the promise is unequalled, and the results unlikely to have been hitherto surpassed.

—CHARLES J. GRAHAME.



EVENTS OF THE WEEK.—Horticulturists will be busy during the ensuing week. As mentioned in another paragraph the Committees of the Royal Horticultural Society will meet at the Drill Hall, James Street, S.W., on the 26th inst., on which occasion there will be a special exhibition of Roses. The Southern Pink Society also again offer prizes for laced and other Pinks. On Wednesday, 27th inst., the National Rose Society's southern Show will take place at Windsor; Richmond Exhibition being held on the same day. Canterbury, Eltham, and Sutton Rose Shows are to be held on Thursday, June 28th.

— **THE WEATHER IN LONDON.**—Changeable weather has been experienced in the metropolis since publishing our last issue. Towards the end of the week the temperature was high, but local showers were experienced. On Monday the atmosphere was much cooler, and it rained most of the afternoon. Tuesday opened bright, but the sky became cloudy, and rain threatened as the day advanced. Wednesday morning was dull, and rain fell during the afternoon.

— **ROYAL HORTICULTURAL SOCIETY.**—The next meeting of the Society will be held in the Drill Hall, James Street, Victoria Street, Westminster, on Tuesday, June 26th. Besides the usual display of Orchids, hardy flowers, and vegetables, there will be a great show of Roses, for which the Society is offering about £50 in prizes, in addition to the Mantell silver challenge cup, value 25 guineas. At three o'clock Mr. J. D. Stuart of Belfast will read a paper on the "Fertilisation of Pansies."

— **MESSRS. A. F. BARRON & SON.**—This is not a new firm, but a natural connection which suggests that reference may be made to a complimentary dinner, given on the occasion of Mr. Leonard Barron's early departure from England to seek his fortune in a wider field. The son of the respected superintendent at Chiswick received on the occasion hearty wishes for his prosperity from the thirty persons assembled under the chairmanship of Mr. A. W. G. Weeks, including nurserymen, gardeners, pressmen, and other friends, and his father met with an ovation. Mr. Leonard Barron has been creditably engaged in connection with the "Gardener's Chronicle," and leaves with the best wishes of its Editor and a host of friends.

— **DEATH OF MR. FRED HORSMAN.**—With regret we record the death, on the 2nd inst., of Mr. Frederick James Serle Horsman, of the firm of Messrs. Fred. Horsman & Co., the well-known Orchid growers and importers of Mark's Tey. Mr. Horsman, who was in his 52nd year, suffered acutely from Bright's disease. When at the Temple Show he was ill, but was able to attend to his business until a few days before his death. The funeral, which took place on the 7th inst., was attended by a great number of his fellow townsmen of Colchester.

— **ECLIPSE MELON.**—This new variety, which received an award of merit from the Fruit Committee at the last meeting of the Royal Horticultural Society, seems to have in a high degree constancy of character. Out of the three fruits placed before the Committee one only was cut and tasted, I might indeed say eaten. I had the pleasure a day or two afterwards of tasting both the other fruits, and each one was as rich in flavour as the first one. I was much amused with what was remarked by one gentleman who tasted the Eclipse. He said "I had thought the shop Melons very nice, but I find now, until I tasted this one, that I had never known what a good Melon was."—A. D.

— **HORTICULTURAL CLUB.**—The usual monthly dinner and conversation took place on Tuesday evening in last week. The chair was occupied by Mr. John Lee, and there were present—Messrs. Selfe Leonard, Bunyard, Monro, Walker, Assbee, Crowley, Adams, with others. A most interesting address was given by Mr. John Assbee on "The Flower Supply of Covent Garden," the facts of which were a revelation to those present. The lecture was illustrated by several boxes of beautiful flowers and plants as they reach the market. A very interesting discussion took place afterwards, in which most of the members present joined. Mr. Lee, who thought the price at which the boxes of small plants were produced almost incredible, proposed a cordial vote of thanks to Mr. Assbee for his most interesting paper, which we hope to have the pleasure of publishing shortly.

— **THE EXTRAORDINARY WEATHER.**—The singularly chilly weather stands out in strong contrast to that of last year. Comparing the meteorological records of the week commencing on the 11th of June and ending on June 17th this year, and those taken between the 12th and 19th of June last year, the "Echo" says some curious facts are revealed. The early months of 1893 were abnormally hot, while the similar period of 1894 has been marked by unusual cold and frequent changes of temperature. Take, for instance, the 15th, 16th, 17th, and 18th of June last, and the register in Hyde Park shows that the thermometer rose on the respective days to 94°, 94°, 101°, and 98°. On the same dates of the current year the highest records were 70°, 68°, 68°, and 66°.

— **A RHODOLOGICAL SOCIETY.**—The difficult genera *Rosa* and *Rubus* are the subject of careful study by French botanists. We learn from "Nature" that a Rhodological Society has been founded for the purpose of publishing a herbarium of the Roses of France, named by the Belgian rhodologist M. Crépin. Those intending to subscribe are invited to correspond with Dr. Pons, Ille-sur-Têt, Pyrénées Orientales. A publication is also announced with the title "*Rubi præsertim Gallici exsiccati*," under the editorship of Prof. Bourlay, Rue de Toul, Lille, and M. Bouly de Lesdain, 16, Rue Emmerly, Dunkerque.

— **GOOD KEEPING ONIONS.**—Will you permit me to say that the single Onion bulb so wonderfully well preserved, which I exhibited before the Fruit Committee of the Royal Horticultural Society on the 12th, was originally shown by Mr. J. Crook of Forde Abbey, Chard? It did indeed seem to be a matter for surprise that an Onion ripened last autumn, in fact in September, should have kept without the least evidence of growth for fully eight months. It was on April 10th that Mr. Crook placed the sample of his Long Keeper before the Fruit Committee, but that was not so very late in the season. The one bulb he gave me to see how long it would keep was left on the shelf of a larder having a south-east aspect, and opens from the kitchen, where the temperature is uniformly high, so that its condition of rest was all the more remarkable. It is possible that Onion bulbs were specially well matured last autumn, but still we all know that some have special keeping faculties, and if the latest keepers of any such kind be constantly selected for seed, the keeping properties in time become more permanent. That seems to be the case with Crook's Long Keeper.—A. DEAN.

— **THE R.H.S. SHOW AT THE CRYSTAL PALACE.**—I have had frequent requests made to me for information when the Royal Horticultural Society Autumn Fruit Show schedules will be issued. I am, however, as ignorant as others, and await their issue with much interest. These requests serve to show how much of interest there is in the country respecting this exhibition, which will doubtless prove to be a great attraction to gardeners from all parts of the kingdom. The opportunity is for the Society a great one, but everything depends on the liberality and spirit in which the occasion is met. I hope the holding over of the schedule means that some additions are being made to it for vegetable and flower classes. Fruit alone makes a fine show, but to attract the public it is important that the schedule should be as varied and representative as is possible. What a chance would it be to have for once a really fine vegetable exhibition, as the Show will fall midway between the late summer and the early winter exhibitions, and when gardeners would be at liberty to stage their finest vegetable products. I am, of course, assuming that the date of the Show will be towards the end of September, as it is useless to hold an exhibition earlier that is to include our best hardy fruits. However, I hope some official information as to the date and the schedule will soon be forthcoming, as it is high time everybody knew all there is to tell concerning a matter of so much horticultural interest.—D.

— It is reported that M. P. Sinteins has just started on a journey of botanical exploration in Eastern Armenia.

— WE understand that DR. H. MOLISCH has been appointed Director of the Institute of Vegetable Physiology at Prague, in the place of the late Prof. G. A. Weiss.

— GARDENING APPOINTMENTS.—Mr. Watt, The Gardens, Willow Park, Booterstown, has been appointed head gardener to the Chief Secretary for Ireland, at the official residence in the Phoenix Park. Mr. McKenzie, for many years gardener to Lord Clonbrock, succeeds Mr. Watt at Willow Park.

— "POSITION AND PROSPECTS OF GARDENERS."—We are requested to state that Mr. Elliott's paper on this subject, which is published in pamphlet form (3d.), from which we cited last week, can only be had from the Secretary, Bournemouth Gardeners' Association, Chine Garden Cottage, Bournemouth.

— A GOOD DARK PINK.—Mr. F. Gifford, Montague Nurseries, Tottenham, sends us blooms of what he is inclined to think the best of all early red flowering Pinks—Pink Homer. This he describes as a new and little known variety. The flowers are large, richly coloured, and very fragrant. It also appears to be a free blooming sort, and is altogether an excellent Pink.

— A VARIEGATED CABBAGE.—Mr. George Hodson, a Yorkshire seedsman, was awarded a certificate of merit for a Variegated Cabbage at the York Floral Fête last week. These plants were a centre of attraction, being the only ones of the kind exhibited. We learn from the "Wakefield Express" that the original plant appeared amongst a large batch of Enfield Market Cabbage seedlings in 1891.

— CYTISUS SCOPARIA ANDREANA.—This is perhaps the finest variety of all the Broom family. The rich golden brown blotch with which the wings of the flower are covered contrasts so finely with the bright yellow of the other parts of the blossom. The plant, too, has the merit also of flowering in a young state. Not only is it well adapted for the front of the shrubbery, but it adds variety and richness to the herbaceous border.—S.

— A NEW PARK FOR ABERDEEN.—On June 9th, Stewart Park was opened for the people of Aberdeen. The park is about 14 acres in extent, and has an exposed situation. The main feature of the park is the delightfully rustic appearance of the upper end. In its construction the old quarry holes have been most skilfully turned to account, and Mr. Philip, the head gardener, has shown excellent taste both in the arrangement of the ground and the selection and disposal of the plants and shrubs. The hillocks overlooking the ponds have been turned into rockeries, planted with Foxglove, Ferns, and other plants.

— LARGE HAILSTONES.—A violent hailstorm visited Vienna on Thursday in last week shortly before seven o'clock in the morning. The hail was preceded by a heavy fall of rain, and accompanied by slight displays of sheet lightning. In the course of a few minutes the streets were covered with a thickness of several inches of hailstones. It is reported in "Nature" that upwards of 100,000 windows were smashed by the hail; numerous trees were entirely stripped of their foliage, and most outdoor plants within the area of fall were destroyed. The hailstones were, on the average, about the size of Hazel Nuts. During the storm the temperature dropped to 10° Réaumur (54° Fahr.), but shortly afterwards the thermometer rose a few degrees. Similar storms are reported from various districts in Hungary and Croatia.

— ENGLISH FORESTRY.—It is quite as easy for people to lose their reason over forest-protection as over tree-spoliation. While on the one side there is a general complaint that there is no good forest management to be found anywhere in Britain, on the other we have vigorous protestations from what may be called the true protectionists against any attempt to make our national woods and forests worthy of a nation which professes to be practical. Many people, says a correspondent in the "Garden and Forest," have the same objection to cutting down an old tree as they have to pole-axing old worn-out horses, and they would sacrifice posterity to sentiment by allowing every tree to stand till it crumbled through old age. If a forester who understands his art sets about clearing away worthless and decayed trees to make room for young and healthy ones, he is sure to bring about his ears the protests of certain persons. It is hard up-hill work to teach either the masses or the classes that the systematic cultivation of trees cannot be managed without the use of axe and saw as well as spade.

— GEUM MINIATUM.—Although a single flowered variety deserves more attention than it receives at the present time. The colour of the flower is striking, being orange scarlet or an apricot tint.—M.

— WE understand that Mr. R. Warrington has been elected Sibthorpe Professor of Rural Economy at Oxford, and his duties include twelve lectures, to be given on the scientific principles of agriculture and forestry each academic year.

— NEWCASTLE-ON-TYNE SUMMER SHOW.—We understand that the Show to be held on the 18th, 19th, and 20th of July will take place in the Recreation Ground, the scene of last year's Show, which was such a phenomenal success. This year the Council will provide additional amusements, which prove so attractive in the North.

— BAPTISIA TINCTORIA.—This plant much resembles a yellow Lupin in many respects, or it can be likened to the Scotch Laburnum turned upside down in the formation of its flower stems or racemes. The colour of the flowers is a pale shade of yellow. For its somewhat peculiar form of flowering it is worthy of a place in the herbaceous border. It grows about 3 feet high.—E. M.

— BUDDLEIA GLOBOSA.—I noticed recently a very fine specimen of this beautiful hardy shrub at the residence of Mrs. Lloyd, Merton Lodge, Chiswick, the garden attached to which is so well managed by her gardener, Mr. John Addison. The specimen in question is 9 feet high and 9 feet through, and perfectly wreathed as it is at the present time with its orange ball-like flowers, forms a most conspicuous and attractive object in the shrubbery border.—J. B.

— THE INTERNATIONAL CONGRESS OF APPLIED CHEMISTRY (lasting eight days) will be opened at Brussels on the 4th of August, 1894, under the auspices of the Belgian Government and the Presidency of the Minister of Agriculture. The business will be divided into four sections, the second of which comprises agricultural chemistry, and the third the consideration of alimentary produce. The subscription payable by the members of the Congress will be 5 francs.

— BONGARDIA RAUWOLFI.—I do not think that the synonyms for the above named plant given in your last week's issue (page 479) are correct, as I believe the usually recognised alternative to be *Leontice chrysogonum*, not *Bongardia chrysogonium*, as stated in your paragraph accompanying the excellent woodcut of the plant. I may be misinformed as to the absence of the "i" in the end of the second name; but as to the first name I think you will find that I am correct, as I grew the plant for several years, though I have now lost it. I never before heard of the name *Olivieri*.—W. E. GUMBLETON.

— SCOTTISH HORTICULTURAL SOCIETY.—At a meeting of the Scottish Horticultural Society, held on the 5th inst., Mr. Thomas Boyd, gardener to William Forbes, Esq., of Callender, read a paper on "The Cultivation of the Vine." He dealt with the subject under several heads, and gave his views on the questions of the house and border propagation, purchasing, planting, general culture, including manuring and watering, and competitions and judging. Referring to the question of judging Mr. Boyd is reported to have said that he insisted upon every judge having a full knowledge of the points of good Grapes before he was called upon to give an award for excellence. He contended that the points of a Grape were:—1, Flavour. 2, Bloom. 3, Regularity in bunch and berry. 4, Size of berry. 5, Size of bunch. He had himself seen judges dispose of a whole table of Grapes without tasting a single berry.

— THE ST. JOHN'S BREAD TREE.—Notwithstanding the belief of Professor Riley that St. John was just as likely to have fed on the real locust as on the succulent seed vessels of *Ceratonia Siliqua*, this particular tree will always be known as St. John's Bread Tree. It has been very successfully introduced into southern California and southern Florida, and is now getting in good demand. It is known as the Carob tree, which is the Arab name for the seed pods, on account of their horn-like shape. They like a rather dry climate. Two very fine trees are said to be growing on Mount Olivet, just above the Garden of Gethsemane. It was a great surprise to Americans, says "Meehans' Monthly," to see among the collections of agricultural articles from the south of Europe, during the American Centennial, how much this tree was appreciated, as nearly every collection had samples of varying varieties in their lists. In the South of Europe it is generally the chief article for feeding horses, cattle, and swine, as well as the general article of food among the poorer natives.

— THE POTATO CROP IN JERSEY.—A correspondent informs us that the May frosts did not injure the Potatoes in Jersey. For several weeks large consignments of the new Potatoes have been brought from the island to Southampton and London. Not only are the exports larger than last year, but the prices are higher than those which then prevailed. The trade on the average of the last eleven years has produced a sum of £334,775 a year. About 55,658 tons have been exported each year.

— WEIGELA AMABILIS.—At the present time amongst hardy flowering shrubs there is not one that is making a better display than this Weigela, or Diervilla as some term it. Its rosy pink flowers render it a more showy kind than *W. rosea*, and the growth is stronger, producing longer branches, which are covered with blossom. I grow this and other Weigelas in a mass on the top of a bank, and a fine effect is produced by this treatment, which is far in advance of dotting the plants here and there about the shrubberies.—E. M.

□ — LEIOPHYLLUM BUXIFOLIUM.—Of the many Ericaceous plants that bloom in the spring this is one of the prettiest. Growing from 6 to 9 inches in height, it makes an excellent plant either for a small bed, a group in the rockery, or a border, for a bed of some taller growing peat-loving plant. The growth is very compact, and the small pinkish-white flowers are borne on short upright terminal racemes from nearly every growth. Propagation may be effected by division or by cuttings inserted in sandy peat, and kept in a close cool case until rooted.—D.

— STRAWBERRY THE CAPTAIN.—Having tried this variety outdoors, and being favourably impressed with it, I resolved to give it a trial in pots. Its behaviour this season in company with President has led me to form a high opinion of it for forcing, and I intend to increase the number. Placed together in a second early Peach house, Captain was quite four or five days earlier, the bright large red fruit of perfect shape, excellent in flavour, keeping up a good succession. Another point in its favour is that it is not subject to mildew as is President, and I never remember in any former season the latter being so badly infested with it.—R. P. R.

— PLUMIERIA BRAZILIENSE.—My employer, who has just returned from a tour round the world, when at Honolulu in the Sandwich Islands saw the people there wearing wreaths of flowers, and on his asking the name of the flowers a gentleman said they were "*Plumieria braziliense*." The other day my employer asked if I would try and find out if the species is or can be grown in this country. I looked over my "*Johnson's Gardeners' Dictionary*," and on pages 649 and 986 there are descriptions given of several varieties, but not the "*braziliense*." The colour, I believe, is a creamy pink, and the flower is about 2 inches across. Any information about it will greatly oblige.—A. S. H. G. [*Plumierias* are grown in warm plant houses in this country, but are not frequently seen. We are not acquainted with the particular species mentioned. It is said the flowers of *P. rubra* are so sweet that the women of South America adorn themselves with them, and place them among clothes as we do Lavender.]

— DIGGING COMPETITION.—In connection with the Widcombe Horticultural Club the annual digging competition for members was held on the 12th inst. The piece of land selected for the purpose was at the back of Mr. R. A. Moger's residence, "Wansdyke," Claverton Down, and the competitors, of whom there were about a dozen, divided into two classes, were each given half a lug, 16½ feet by 8½ feet, to dig. Prizes were awarded to the competitor whose ground was dug the best, time being also taken into consideration. Among those present watching the competitors were the Vicar, the Rev. F. La Trobe Foster, and Mrs. Foster, Rev. H. S. Brooke, Messrs. Clarkson, Banks, and Horseman. The Judges were:—Gardeners' class, Mr. Horsell; Amateurs', Mr. W. J. Mould. At half-past seven the competitors were started, and amid some laughter they began digging as if for dear life. In the gardeners' class the half lug was dug in time varying from nineteen to twenty-two minutes; in the amateurs' class, thirteen and a half to twenty-five minutes. Curiously enough the first prize in each class was awarded to the one who finished last; Mr. Pumphrey, who acted as timekeeper, announcing the result as follows: Gardeners.—First, Mr. C. Trimby; second, Mr. Rowsell. Amateurs.—First, Mr. T. Cutler; second, Mr. J. Ball. Mrs. Foster distributed the awards at the conclusion of the competition, and afterwards Mr. Moger kindly entertained a number of those present at his house. There was some very good digging, that of the winner of the amateurs' class being generally thought the best done.

— MR. J. FRIEND, who for the past six years has been in charge of the gardens at Rooksnest, Godstone, has taken the management of the farm for the Hon. P. C. Glyn, in connection with the above. This is recognition in a practical form of the services of an able man, and his friends will be glad to learn of his important extension of duty.

— EAST LONDON HORTICULTURAL SOCIETY.—This Society will hold a Summer Flower Show on June 28th, 29th, and 30th, in the Queen's Hall and Winter Garden of the People's Palace, Mile End Road, E. A liberal schedule of prizes has been offered for competition amongst the members of the Society, and in addition to the flowers and plants for competition, loan exhibits of plants and flowers are invited.

— THE LIVERPOOL HORTICULTURAL ASSOCIATION.—We are informed that the fifteenth summer flower Show of this Association will be held on the review ground, Sefton Park, on Saturday and Monday, August 4th and 6th. A comprehensive schedule has been prepared, and the liberal prizes offered should bring forth a good display of garden produce. Mr. W. Dickson, 7, Victoria Street, Liverpool, is the Secretary.

— CHINESE PÆONIES.—Messrs. E. H. Krelage & Sons, Haarlem, send us some blooms of Chinese Pæonies, and remark that at Amsterdam recently they exhibited a hundred distinct varieties, three gigantic flowers of each in a vase, making a brilliant display. Some of the flowers sent were faded when they reached us on the 18th inst., though a few were very beautiful, especially such varieties as Eugénie Verdier, Philomel, Van Dyck, Eugène de Hour, Virginia, and Madonna.

— FLOWERS FOR BEES.—Amongst the many flowers recommended for bees "*Viper's Bugloss*" is a special favourite. It is a biennial, and grows to about 3 feet high, and as much or more across the many spikes of bluish flowers, more imposing than *Anchusa italica*. Bees are never absent from it when they are abroad. The seeds in my locality were probably dropped by a bird, as plants grow where no seeds of any sort are sown, and have never been seen anywhere before in the neighbourhood.—W. T., *Blantyre*.

— THE TREES IN EPPING FOREST.—At a meeting of the Court of Common Council, held on Thursday 14th inst., Mr. Salmon, Chairman of the Epping Forest Committee, submitted a report of the experts on their examination of Epping Forest, and he suggested that it should be printed and the consideration adjourned. The report, he mentioned, was, on the whole, most favourable, and fully justified the action of the conservators. The Committee had decided that in future when there was any question of felling or cutting timber they would invite the Chairman of the Committee of experts and one of his colleagues to be present at the marking of the trees.

— THE GOLDEN VALERIAN.—Beautiful as is the red Valerian when in bloom, whether in gardens or in its wild condition on the chalk, it is a poor plant to look at when out of flower. The Golden Valerian is one of our most effective of spring hardy foliage plants, yet is far from being common in gardens. Good clumps in borders during March and April are very effective, as the leafage is of a clear golden yellow. When in bloom, however, the flowers are white and comparatively inconspicuous. When the plants start to bloom the leafage becomes green. It is well then to cut out the stems, and thus lead to the formation of new crowns. Cats have a special fondness for the stems of Valerian plants.—A. D.

— THE PEPPER TREE.—For many years in the gardens of the curious, a plant was frequently grown called *Schinus Molle*. Its chief interest to the public mind was the fact, according to "*Meehans' Monthly*," that when the leaflets were broken in little pieces and placed on the surface of a vessel of water, they would dart and shoot like living creatures in every direction. This was believed to be caused by the propulsion of a gas from the veins and midribs. This tree has now been introduced into California for the purpose of shade, and is widely known as the Pepper tree. It exudes a gummy matter from the foliage, which is said to cover the tops of carriages driving under it with spots. The gum forms a good dentifrice, and it is reported that a lotion made from the bark is good for reducing inflammations. It was supposed to be a tree which would be distasteful to all insects; but the California papers tell us that in that country it is subject to the ravages of a scale insect; and this is about the only defect to its general use as a first-class shade tree.

— **BIRMINGHAM AMATEUR GARDENERS' ASSOCIATION.**—This Association appears to be flourishing, there being now 230 members, who had their annual excursion on the 9th inst., the destination being Ragley Hall, Alcester. Mr. Christie, head gardener to the Marquis of Hertford, kindly conducted the party through the gardens. The following programme has been prepared for the ensuing six months:—“July 4th, impromptu discussion, Mr. W. H. Wilks; Aug. 1st, ‘Hyacinths, Narcissi, and other Ordinary Bulbs,’ Mr. Wm. B. Griffin; 15th, questions and discussions, Mr. Geo. Pressly; Sept. 5th, ‘Hardy Plants, particularly those suitable for Parks and Public Places,’ Mr. W. B. Child, F.R.H.S.; 19th, impromptu discussion, Mr. C. Shotton; Oct. 3rd, a paper given by Mr. F. Nash of Bath on ‘Lilies and Irises’ before the members of the Bristol Society, to be read by the Secretary; 17th, questions and discussions, Mr. W. H. Peake; 31st, impromptu discussion, Mr. E. D. Clark; Nov. 7th, ‘Judging,’ Mr. T. P. Cope; 21st, discussion and queries, Mr. A. Roe; Dec. 5th, lecture (subject to be announced), Mr. Herbert Stone, F.L.S.” These meetings commence at eight o'clock prompt, and each member has the privilege of bringing a friend. Mr. W. B. Griffin, Wychbury, Alcester Road, Moseley, is the Hon. Secretary.

— **MESSRS. SUTTON & SONS' ANNUAL EXCURSION.**—The first day of perfect summer weather, Thursday in last week, was, fortunately for those who took part in it, chosen as the date of the excursion which Messrs. Sutton & Sons annually provide for their employes; and the charming climatic conditions, being all that were needed in addition to the arrangements made by the firm, put the finishing touch to a day of thorough enjoyment. Starting at 7.50 A.M., the heavy special train, which had been provided by the S.E.R. Co., conveyed nearly 600 happy persons to Brighton, which has been visited twice before, and was this year again selected by the general wish; and “London-by-the-Sea” was reached by 11 A.M. The attractions of Brighton were fully enjoyed by the excursionists, the Aquarium (for which tickets of admission were given by Messrs. Sutton to every one of the party) was much patronised. The return journey was completed about 11 P.M., when the happy party dispersed, expressions of thanks being heard on all hands for Messrs. Sutton's liberality, which was, as usual, of the most complete character. In addition to providing the special train, &c., every married man received an invitation for his wife; every employe was before starting, as usual, given a sum fully adequate to the day's needs in the matter of refreshments and amusements; and, still more, all four partners—Mr. Martin J. Sutton, Mr. Herbert Sutton, Mr. Arthur W. Sutton, and Mr. Leonard G. Sutton, as well as Mrs. M. J. Sutton and Mrs. A. W. Sutton—accompanied the party, and, as on every other occasion, by their personal and kindly exertions promoted the happiness and enjoyment of all.—(“Reading Mercury.”)

— **WAKEFIELD PAXTON SOCIETY.**—A lecture on “Summer Treatment of Fruit Trees” was delivered by Mr. T. Pitts, head gardener to Mr. D. B. Kendell, J.P., of Thornhill House, Walton, at a recent meeting of this Society. Mr. Pitts dealt with his subject in a practical and interesting manner, pointing out the great importance of treating fruit trees in a proper manner in their infancy, because they could not expect good fruit from bad stock. He clearly and fully explained the proper mode of planting fruit trees, showing that the young roots must be carefully preserved and spread out, and the trees must not be planted too deep. If a tree was of a good stock, was properly planted, and the weather was seasonable, it would thrive. He expressed himself strongly in favour of the free use of the pruning knife amongst young fruit trees in summer, saying that it was a case of spare the knife and spoil the tree. He also warned his hearers against the practice of working young fruit trees too much, or allowing them to bear too much fruit in their infancy. He said fruit trees require well feeding in the summer months, and he recommended liquid manure. Raspberry canes, he said, require free manuring between the rows, which should be 4, 5, or 6 feet apart. In doing this they must be careful not to damage the young and fibrous roots round the canes. After fruiting the old canes should be removed, and not left until the following spring. He preferred wood stakes or wood laths to galvanised wire supports, and the ground should be top-dressed in spring and not in autumn. He was in favour of growing Currant trees in the standard form; they should be judiciously pruned, and if when bearing the trees were covered with old muslin the fruit could be preserved on the trees until October or November. He was also in favour of making shrubberies useful as well as beautiful by mixing fruit trees with the shrubs. In all their work amongst fruit trees they must exercise patience, and not expect good results at once. In order to keep fruit trees free from insects he recommended syringing with water in which quassia chips had been soaked.



MR. T. H. SPAULDING.

WE regret to learn that this gentleman, who has played such an important part in the distribution of American seedlings, has been confined to his bed with a severe attack of pneumonia. The latest advices inform us that he is now out of danger, although still very weak, and we are sure we only echo the wish of all those Chrysanthemum growers who are interested in American varieties when we express the hope that he may be speedily restored to his accustomed health and strength.

American horticulture could ill afford to spare one who has done so much to popularise it on this side of the Atlantic, and we trust the next advices will assure us that he is once more himself.

A BELGIAN CHRYSANTHEMUM CATALOGUE.

Mr. O. de Meulenaere, an eminent Chrysanthemum grower in Ghent and a prominent exhibitor at the shows of the Royal Horticultural and Botanical Society there, is engaged on the preparation of a very exhaustive list of varieties that have been distributed since 1890, supplemental to the work he published that year entitled, “Liste Descriptive des Chrysanthèmes d'Hiver.” It will appear in time for next season's shows, and will make the fourth Belgian book on the subject that has been issued since 1888, by which we may conclude that the popular flower is still holding its own in King Leopold's little realm. Mr. de Meulenaere has adopted an entirely different method of arrangement from that practised here, upon which I may have something further to say later on.

NATIONAL CHRYSANTHEMUM SOCIETY OF AMERICA.

The American Florists' Directory for 1894 gives the following particulars about this Society. It was organised at Buffalo, N.Y., August 22nd, 1889, under the name of the American Chrysanthemum Society, which was changed to the National Chrysanthemum Society of America in 1893. Its aims are to supervise the distribution of new Chrysanthemums, and prevent as far as possible the introduction of worthless varieties, to ensure correct nomenclature, to promote the formation of local Chrysanthemum societies, and encourage better methods of cultivation. An official register is kept, by which duplication of names is avoided. Synonyms are watched for, and when discovered are reported to members and the trade generally. Meetings of the Society are held in conjunction with the Annual Conventions of the Society of American Florists.

A JAPANESE NURSERY IN AMERICA.

The commercial enterprise of the ingenious Japanese is proverbial. Although the horticulturists of the Land of the Rising Sun have not yet favoured this country with much of their attention, yet at the last Paris Exhibition and at the World's Fair in Chicago they were well and efficiently represented. I am informed that a Mr. Yoshiike has recently opened a nursery in California for the growing and distributing of Japanese plants in the States. His catalogue, printed in English, hardly compares with the more elaborate publication of the kind issued by the Yokohama Gardeners' Association, but contains announcements of novelties in Palms, fruit trees, Roses, Pelargoniums, Chrysanthemums, and other florists' flowers. The portion devoted to Chrysanthemums amounts to thirty pages, many of the varieties named being Japanese seedlings. Some of them are strongly suggestive of Japanese nomenclature, such as White Lotus, Golden Brocade, Morning Glow, Silver Waves, The Tiger, Flying Crane, Golden Pheasant, Golden Waves, Harvest Moon, Master of Garden, Mount Fuzi, Royal Brocade, White Crane and Yellow Lily.

CHRYSANTHEMUM SALAD.

Having long been acquainted with the custom of eating Chrysanthemums as a salad in Japan I made the attempt in 1892, but the experiment can hardly be considered a gastronomic success, although I tried them raw, boiled, and dried for use in soup. In the case of friends desirous of imitating my example I quote the following from Mr. Yoshiike's catalogue. “Delicacy, the edible Chrysanthemum. The flowers of this valuable variety are large and graceful, colour the brightest golden yellow; petals broad, long and incurving; very early and profuse bloomer. One of the finest in the entire Chrysanthemum family. At some districts in Japan hundreds of acres of land are used for the cultivation of these edible Chrysanthemum flowers for table. Cook the flowers in boiling water about thirty minutes and take them out into clear, cold water; let them stay there twenty minutes or longer, then take them out and squeeze all the water off, add salt and vinegar. They are very sweet and of desirable taste and flavour.”

For my part this recipe comes to hand too late, and the only advice I offer to those who wish to try the so-called “delicacy” is to see, which I did not, that the blooms are quite free from green fly.—C. H. P.

THE SWANLEY HORTICULTURAL COLLEGE.

I AM much indebted to Mr. H. Cannell, sen., of Swanley, for a look over this interesting Institution. It is situate at Hextable, a small hamlet a mile or so from Swanley Junction station, and lies rather low perhaps, but in the midst of a district that is as it were given over to fruit culture in fields and orchards. The subsoil is chalk and the cultivated surface soil not very deep, yet, as is usually the case on chalk, it is sweet and fertile, especially where it has been some years cultivated.

The College was formerly the residence of Sir Edward Reed, M.P., the eminent marine engineer, and its lecture hall, a capacious room capable of holding 150 people, was formerly the balancing saloon of a steamer built for the Channel traffic by him with the hope that oscillation, which conduces to sea-sickness, would be prevented. The scheme, like so many others of similar nature, seems to have failed, and the large saloon was transferred to its present site at Swanley, where it makes a most useful lecture hall for the students.

The college is now under the control of Mr. Colville Browne as Principal, and it would seem as if in the change made in this and other directions the institution had shaped for itself a more practical course than it previously took. In any case it is to be hoped so, as unless a college for instruction in horticulture be essentially in practical hands, the description of instruction given can hardly prove of tangible value to students. Of these there are, as I learned, twenty-eight males and twenty-five females, all young people and from the educated classes. The males reside in the college, and the females in a separate house, but all study and work together.

In the matter of actual garden training the males seem to do the rougher work, such as trenching, digging, hoeing and earthing, and the females the lighter work as found in tying, budding, grafting, Grape thinning and training, with the exception of the Tomatoes, to which the fair sex have an invincible repugnance.

That the College and its ground of 43 acres, much of which is under fruit and vegetable culture, added to which are numerous glass houses, contain most of the elements of a practical horticultural education there can be no doubt. Everything depends on the capacities of instructors, and the desires or otherwise of students to acquire the knowledge by utilising to the utmost the facilities at their hand. It does seem obvious that with the same description of oversight outside that appears to be exercised by the present overseer of the glass department, whose work speaks for itself, that determined students might secure a really excellent garden education, especially if later it were supplemented by a year in a first-class private garden, a year in a fruit nursery, and still another year in a good market garden.

With such a practical curriculum allied to what valuable opportunities for scientific and theoretical study the College affords, very capable students should be turned out. All the same, gardening is a vocation that can only be thoroughly mastered by downright hard work, as all good gardeners know. Several years' study in a college may eventuate in the turning out of horticulturists a long way inferior in knowledge and usefulness to men whose entire education has been found in a series of private gardens. On the other hand, the college student, having such great facilities to acquire technical knowledge, such as can be obtained at Swanley, may if he makes the most of his opportunities, start in life with superior advantages to what the youth in an ordinary garden possesses. There is, however, no royal road to success in gardening. Proficiency in sports and pastimes, in cricket and lawn tennis, in leaping and football, will help absolutely nothing—nay, such proficiency constitutes very grave dangers to any student, as if the mind becomes centred on these things it must of necessity be abstracted from practical study, and the golden hours are wasted.

I have referred to this matter because I noticed at Swanley, as is so common in all similar institutions, so much stress laid on recreation, and although I looked in early in the afternoon on a fine day, yet but one male student was doing any work, and only some three or four of the females, whilst it was obvious that everyone might just then have been usefully employed. The old axiom, "All work and no play, makes Jack a dull boy," is an awfully hackneyed one, and grossly misused, for it has been constantly quoted in favour of the wanton misuse of time and strength, which with youth should be far more largely than at present given to labour and to study. There is no form of exercise in the world that is at once more manly, more healthful, and more profitable, than is found in open air garden labour.

But I know readers will ask, What about the crops on the ground? Well of these there is a good orchard breadth of standard Apple trees, and of Cob Nuts, trained cup-shaped on the Kentish fashion; also an undergrowth of Currants; Strawberries in large breadths, good and full of promise; cordon and horizontal trained Pears and Apples on walls and wire trellises; also pyramid Pears and bush Apples, Gooseberries, Currants, Raspberries, newly planted standard Plums; also Peas, Beans, and Potatoes, with most of which are being tested diverse forms or combinations of chemical manures; good Onions, Cabbages, and other vegetables. This department, however, to my mind, seemed to need more efficient supervision.

In the glass houses, of which there are, besides some detached, a dozen 100 feet long span-roof structures in one block, Grapes, Peaches, Cucumbers, Tomatoes, Melons, and some Roses, are showing as good products as could probably be found anywhere under similar conditions, and reflects the highest credit on the foreman who has charge of this department. That so much of the place is devoted to the production

of material for market is rather an advantage than otherwise, as in such case necessity compels at once the most useful and economical methods of culture—all excellent training.

There are clumps of Briar and Crab, or Paradise or Pear stocks, on which budding and grafting can be taught and practised, and an old orchard also gives ample opportunity for instruction in spraying for the destruction of maggot, and also in rough tree grafting. There seems to be one notable deficiency, so far as the females are concerned, a lack of instruction in the art of using flowers in floral decoration for vases, épergnes, tables, bouquets and buttonholes, all of which is of value for them in horticulture. That whatsoever of knowledge they may acquire they can even become manual workers in gardens, but performing hard labour in digging, hoeing, planting, mowing, and a thousand other forms of garden labour are, of course, quite out of the question with us, whatsoever may be the case with some classes of women on the Continent. That they may learn to discharge many garden duties of a lighter nature, and do them well, there can be no doubt. They can also at the College obtain some useful knowledge in connection with poultry and bees.

In all cases here, however, with such very considerable, indeed in many directions excellent, opportunities for the acquiring of practical knowledge, everything must depend on firm, rigid discipline, in sound capable instruction, and in the determination of the students to utilise their facilities to the fullest. There is a splendid field here for lecture assistance by capable instructors, as all that is taught in the lecture room can be utilised and practised in the garden and orchards. Generally, I was favourably impressed with what I saw at the college, and though finding some things to criticise, yet do I heartily wish for the institution a prosperous career.—A. D.

SARRACENIA WILLISI.

THE accompanying illustration (fig. 81) represents *Sarracenia Willisi*, an interesting plant that was exhibited by Messrs. J. Veitch and Sons, Royal Exotic Nursery, Chelsea, at the Drill Hall, Westminster, on the 12th inst., and for which a first-class certificate was awarded by the Floral Committee of the Royal Horticultural Society. This *Sarracenia* is a hybrid, being the result of a cross between *S. melanorrhoda* and *S. Courti*. The plant is dwarf in habit, but of an attractive appearance, being bright in colour. The pitchers are pale green veined red, passing to a deep crimson as maturity is approached. When grown in a pan, as was the plant from a sketch of which the engraving has been prepared, this *Sarracenia* is by no means devoid of effectiveness, especially if associated with plants of a harmonious character.

ROYAL HORTICULTURAL SOCIETY.

JUNE 12TH.

SCIENTIFIC COMMITTEE.—Present: Dr. M. T. Masters (in the chair); Mr. McLachlan, Prof. Müller, Col. R. Trevor Clarke, Dr. Bonavia, and Rev. G. Henslow, Hon. Sec.

Lilium candidum Diseased.—Specimens were sent by Mr. G. Tebbutt of Mogden House, Isleworth, with the following observations:—"The plants were attacked last year, but not to such an extent as now. This year the bulbs were transplanted to a fresh place, but the disease has become worse. It will be noticed that the bulbs themselves are strong and healthy, with very little sign of fungoid growth, while the stems and leaves are badly attacked. In the same patch of ground are *L. chalcedonicum*, *L. tigrinum*, and *L. Martagon*, but not one of these show signs of the disease. Tulips which now occupy the ground planted with *L. candidum* last year have also been attacked." Dr. Masters suggested spraying with Bordeaux mixture early in the season, so as to reach the bulbs and young leaves. Such a method would be protective, but not necessarily curative. The disease itself is fully described by Prof. M. Ward in "Annals of Botany," ii., page 319.

Pears Damaged by Frost.—Dr. Masters exhibited several small Pears black and decayed, the result of the great frost in May.

Droppers in Snowdrops.—He also showed specimens of this peculiarity, which is more commonly known in Tulips.

Monstrosities.—He also exhibited the two forms of "Peloria" in *Calceolaria*. 1, A true reversion to a regular "sleeve"-like form; 2, a fourfold repetition of the "slipper;" as well as a *Lælia* with three lips (true peloria), and sub-virescent spathes of Aroids.

Photos from Transvaal.—Dr. Masters also exhibited some illustrations of trees, &c., but excepting a fan-shaped *Mimosa* they were not determinable.

Trifolium subterraneum.—He also showed specimens and drawings of this Clover found at Folkestone. A full description of its method of burying the unripe pods and deriving nourishment by means of the hairs will be found in Darwin's "Movements of Plants," page 573.

Horse Chestnuts Cankered.—Specimens and photos of a badly diseased tree were received from the Superintendent of the Royal Victoria Park, Bath, with the following remarks:—"The tree was planted (one of six) about sixty years ago; three of the six have died from the same disease, and the others are affected more or less in the same way. It will be observed from the photo that the diseased growth is gradually spreading all round the trunk of the tree, and will eventually choke it (as has

been the case with the others) by preventing the natural flow of the sap: I may say that the subsoil here is in some parts gravel, and in others blue lias clay. The trees were planted over both, and were all grafted just above the ground. Six years ago it was thought that if we had trees on their own roots they might not be subject to the disease, accordingly some good nuts were gathered from the best of the trees, and a number of seedlings were raised. Most of them have flowered this season. Of the flowers some are inferior, others equal, and others superior to those of the parent. The ordinary white-flowered Horse Chestnut is quite free from any disease, as are also the Pavias." The specimens were forwarded to Prof. H. Marshall Ward for examination and report.

Asparagus Fasciated.—Mr. Kitchen of Hampton sent a specimen of

following spring the fungus began to appear on a leaf here and there in my collection, and for twelve months it was continually cropping up. I have seen no trace of it now for a long time, and doubtless the drastic measures I adopted thus quickly stamped out the disease. My clothes in this case must have been the medium by which infection was carried to the plants.

I entertain the fear that composts in which manure forms a part is responsible for the attacks of nematoid worms, which, even when confined to the foliage only, are capable of doing much harm. On that account I am careful to incorporate no manure in the soil for "Malmaison" Carnations. The plants grow well without manure, provided some manurial agent is watered into the soil as required. It is possible



FIG. 81.—SARRACENIA WILLISII.

this extremely common phenomenon, with the end spirally twisted into a helix.

Polygonum Leaves Marked by Frost.—Mr. Henslow showed leaves received from Wiltshire, having two colourless longitudinal bands. Every leaf on the tree was said to be similarly marked. It was attributed to the frost catching the young leaves just where they were exposed on unfolding.

DISEASED CARNATIONS.

THOSE persons who are troubled with disease on the foliage of "Malmaisons" and on other Carnations ought not to be discouraged on that account. I do not here refer to *Helminthosporium*, of which I know very little; but my experience of it may be of value to others. A gentleman in the south of England kindly sent me examples of foliage infected with this fungus, which, after examining, I burnt. The

that the above may be responsible for more mischief than your correspondents imagine. Besides this leaf disease and somewhat like it in general appearance there is a very common form, which is initiated by unsuitable treatment. The first-named attacks the lower parts of the leaf, the latter the tips. The only palliative in either case is to remove the leaf, or the affected part of the leaf, as the case may require, when afterwards, by means of good treatment, the plants may outgrow the evil.

Only perfectly healthy shoots, and these not too large, ought to be layered for stock. I am cognisant of several cases where unhealthy plants have been treated so as to produce a healthy stock. A collection I saw last year was composed of large plants, which the year previous had been badly affected, but which, by the removal of infected foliage and keeping only healthy shoots on the plants, had recovered, and were in such vigour as to produce splendid blooms later in the season. In Scotland we find that "Malmaisons" cultivated entirely under glass appreciate a little shade from sun. With me aphids is more troublesome

than any other pest. Tobacco powder is chiefly employed to destroy these, and the only time the plants are syringed is when the powder requires to be washed off the foliage and buds. For any other reason than that I should hesitate to apply water to the foliage.

With respect to border Carnations, good cultivation plays a chief part in keeping plants in health. One of the most important points to be observed, at least in the North, is to layer as early in the season as shoots can be had in condition. When the layers are well rooted let them be planted in the beds in which they are to flower, and in comparison with those layered late in the season, wintered in frames, and planted out in spring, they will be much stronger and more healthy. When leaf disease appears, remove every portion of affected foliage, and if the plants are treated fairly well they will grow out of it, at least in most cases.

Some varieties have gained an unhappy notoriety on account of special diseases which render it difficult, if not impossible, to keep them in life. Of such is the old Crimson Clove, the foliage of which becomes so badly spotted with a blackish appearance that it is not possible in some gardens to grow this esteemed variety at all. Many other kinds are more or less affected with the same disease, but none to the same extent as this. Yellow grounds are troubled with a leaf affection which has the appearance of a brownish-yellow rust. This particular form is quite common, but generally does no great harm. In the case of Mrs. Reynolds Hole, however, I find the greatest difficulty in getting plants to grow. Last autumn I was favoured with healthy plants from nurseries 100 miles apart. Here they met a common enemy which has already destroyed 40 per cent. of the plants. That most beautiful yellow ground, R. H. Elliott, is almost, if not quite extinct, through this cause. I am experimenting with soil of a lighter and of a more open nature for yellow grounds, and I imagine I see more hope for their future. In any case, whoever has disease on plants cannot err in removing the parts affected to layer early for plants for another year, and to beware above all things of coddling the plants in damp or close frames.—R. P. BROTHERSTON.

AMERICAN APPLE EXPORTS.

THE Apple export trade from America to England is by no means a new business, for as long as fifty years ago consignments of a hundred barrels and upwards were sent forward in sailing vessels, that took from four to eight weeks to make the voyage. Ten years later slow steamships landed the fruit in from eighteen to twenty-five days, though not always in sound condition. Until 1870, 500 barrels of Apples were considered a large shipment, but since 1875, with swifter steamers, the business has greatly increased, and is now a regular department of the fruit trade, in which some fifteen firms in New York are engaged, besides half a dozen shipping brokers, who see to arranging for space on the steamers and attend to other details of transportation. In 1880-81, a season of good crops, the enormous quantity of 1,159,380 barrels went to Europe from United States ports alone. The carefully compiled reports of Mr. Mahlon Terhune, for the years since 1880, show great variation in the quantity of yearly shipments, the result of abundant or short crops. For example, in 1892-93 more than 650,000 barrels were shipped from New York, Boston, and Portland; of these Apples almost 250,000 barrels, or nearly 38 per cent., were grown in Canada. The shipments made direct from the Canadian ports, Montreal and Halifax, amounted to nearly 546,000 barrels.

The Apple export season dates from August to May, and from advance sheets of Mr. Terhune's statistics of shipments for 1893-94 it appears that the minimum quantity of less than 70,000 barrels went out from the United States this season, and but 86,000 barrels from Canadian ports. These figures indicate, with the single exception of 1883-84, the dullest Apple trade in twenty-five years. Reasons for this unusual export market are found in a short crop, made still smaller by the heavy storms of last autumn, large importations to England from other countries, and the prevailing hard times. These exports, although comparatively small, were large enough to diminish appreciably the stock already insufficient for home use, so that prices have ruled unusually high in this market.

The first Apples are shipped about August 1st, Keswick Codlins from New Jersey being the earliest export of last year. The Orange Pippin, a better fruit, follows closely, but the export of these tender summer Apples is always attended with risks, and as they are needed at home shipments are likely to continue small. During the year almost every variety of American Apple is exported, and Fameuse and other delicate Apples stand the journey well, Red Astrachan being one of the few kinds which rarely arrives at the destination in good condition. Red-skinned Apples are preferred in England by the masses, and the attractive King Apple is in especial request early in the autumn. But there are not enough of these, and in recent years Greenings, which come into market about the same time, have gained a place in spite of their inferior colour.

But the great export Apple is the Newtown Pippin, the first American Apple shipped to England. Coming originally from orchards in Newtown, Long Island, the best of these Apples are now grown in the mountain districts of Virginia, where they are locally known as Albemarle Pippins. Here the fruit matures early, and is ready for shipment by the 10th of November. These Pippins, grown on Long Island and in the Hudson River district east of that river, mature later, and are not fully ripened and well-coloured before January. On this side of the continent Newtown Pippins are grown only in the sections

indicated. But the northern orchards are dying out, and efforts at propagation are not successful, and the fate of the Spitzenberg twenty years ago threatens this fruit. Westchester County, formerly a great centre for these Apples, now produces small scaly fruit, and it seems to be only a matter of a few years when there will be none of these Apples grown in the north. It has been thought by some that if the trees were not started from root-grafts, but were grafted high up on some vigorous seedlings, they might once more succeed where they are now failing. In the Virginia district the fruit grows large and of excellent quality.

In New York State three heavy storms last autumn cut prospective orchard harvests of 1500 to 2000 barrels down to a few hundred barrels, but in Virginia the damage was slight and the crop was large, and of the good quality which attends a full-bearing season. Quite as many Newtown Pippins went abroad, all Virginia fruit, as in other recent years, and at paying rates, prices in England ranging from 25s. to 40s. a barrel for No. 1 fruit. They are largely used for table decoration there, and their rich flavour commends them highly, while they have also the crisp and sour qualities demanded in the English market. Their firm flesh and tough skin especially adapt them for packing and shipment, whereas many kinds, such as the Northern Spy, are easily bruised and discoloured. The Newtown Pippin is much better known in England than it is in New York, since nearly the entire crop is exported. Christmas presents of these Apples have long been fashionable, and banking firms in New York send abroad sometimes as many as fifty barrels to their business friends.—M. B. C. ("Garden and Forest").

ST. MARY'S, TALLAGHT, CO. DUBLIN.

GREAT is the power of the Press, keeping us figuratively in touch with fellow workers, and on occasions literally bringing us in contact with them also. Through the medium of these pages I lately had a flying visit from a gentleman whose conversation soon revealed that fellow feeling which draws man to man. Later still the return visit to him, whilst affording me pleasure, prompts the giving of these few notes on an historical place and its gardens.

The day was fixed and proved propitious when we two (another of the craft) set forth along the country roads en route for Tallaght. Many acres of Furze in bloom give a golden glow to the hill sides, and our method of travelling gives ample time for observation. My friend lures me, in passing his grounds, to look in, and I do not regret it. The herbaceous borders are a feast of flowers in great variety. Parrot Tulips in gorgeous plumage hover over lesser things and flutter their wings in the warm sunshine. We probe for the name of a very beautiful Aubrietia and find it is *Leichtlini*, but we must leave this galaxy of beauty, for the main object is yet before us.

So on for the steam tram, which gained lands us at the Priory gates of the Dominicans at Tallaght, and this is our rendezvous. On entering, rich music pealing from the church, with the villagers assembling at the doors, gives rise to the thought as to whether the visit is opportune, but a warm welcome from the lay brother (my gardening visitor), now clad in the picturesque robes of his order, dispels all doubt. A procession is being formed which we follow to the long green glade down which it passes, resting here till Brother J. is at liberty, in the peaceful solemnity of this sylvan retreat, shut in from the turmoil of the busy world without. The return of the procession down the long vista of greenery, with the rich tenor voices of the Dominicans chanting, brings a sense of repose, and obliterates the intervening centuries, when the same grounds witnessed many a similar scene, for from the seventh century this has been occupied as it is now by a religious community.

From a gardening point of view the site has been happily chosen; that is, if the secret of success lays in the soil. Fruit trees, Roses, bulbs are of clean growth and exceptional vigour. Hitherto observation has led to the thought that Ireland is not an Apple country, but the hundreds of healthy young trees here seen goes far to disabuse my mind of that idea. A long walk arrayed on each side with pillars of Gloire de Dijon Roses induces me to ask how many there are, but the courteous guide does not know, and there are more than I care to count; they are bristling with buds amidst the bronzy vigorous foliage. Yet it is a Rose which adapts itself to any locality, hence does not yield the surprise that other things noted here do.

That remarkable vigour noticed leads to the question, "Is the soil fresh to its business?" "No, it has been a garden for a thousand years," though the old order of things has given place to the new. This fine row of *Narcissus* Sir Watkin is presumably of the latter; yet who can tell? I had it from an authority on the genus that we are indebted to the religious communities who centuries ago brought with them bits of home from sunnier climes, in the form of roots; consequently distinct varieties of Daffodils have been met with in the vicinity of ruined abbeys and monasteries. Any way, they are now very much at home though but recently purchased. Just a *souppçon* of covetousness crosses one's mind as we look on the long line of broad sturdy foliage yet here of all places that might have been left outside the gates "as one leaves their slippers in Persia."

For inquisitiveness an apology is made, but not needed, so the questioning goes on apace. Brother J. is a born gardener, though he disclaims all knowledge of the art till within the last eight years. But "Tempus fugit." A bed of *Anemone coronaria* "The Bride" strikes one by the purity of that white seldom met with in the mixed

strains. A span-roofed house is planted out with Callas, and the experiment is to be tried of resting them in these quarters for an early start. Other houses of Spiraea, Lilium Harrisii, Tomatoes and Cucumbers savour of the smartness of market growers, but much that we see is that way intended. A long border of Lettuce under an ancient Plum wall is all but cleared at remunerative prices. Outside the garden is a series of earthworks, parallel mounds about 15 feet long, 4 feet high, placed at right angles to the wall; Brother J. throws off a mat and dives among the straw covering. What! Mushroom? yes, thirty-nine such beds, but the grower will not take any compliments, merely says "I was in Chester twelve months ago, and they gave me Wright's Book on Mushroom Culture." Right well has he profited by it. Made a start last year and sold £35 worth.

We hardly realise the antiquity of this place till brought face to face with a venerable Walnut, "St. Maelruen's tree," which tradition says was planted by the Saint, who died here, A.D. 787. Split by the great storm on January 6th, 1839, the trunk and its limbs were spread out to the ground, from which the tops have again ascended full of life and vigour, covering an enormous area of ground. During the Crimean war an offer from Government was made to purchase it for gun stocks, but it is still peacefully shooting here on this spring day. Long may it do so! Entering the lofty building we are ushered into a spacious reception room, where kind thought provides the cup that cheers and is welcome to us interviewers. After admiring the fine paintings in this room we made for home as the deep tones of a bell calls Brother J. to other duties.—E. K., *Dublin*.

ON THE ANALYTICAL DETERMINATION OF PROBABLY AVAILABLE "MINERAL" PLANT FOOD IN SOILS.

SUCH is the title of a pamphlet (reprinted from the Journal of the Chemical Society, vol. lxv., March, 1894) by Bernard Dyer, D.Sc. [Lond.]. Professor Dyer makes the somewhat startling announcement at the commencement of his very scientific researches or record thereof, that "The chemical analysis of soils, which in the early days of agricultural chemistry was looked upon as likely to be of very great practical use in agriculture, was soon found to be, as ordinarily practised, of very limited value. Determinations in the soil of the total quantities of the more important mineral elements of plant food have been long recognised as affording useful information only in exceptional cases, and even in these exceptional cases the results obtained have rather afforded probable indications than absolute information."

After this one naturally asks, What is the value of an analysis of the soil to an ordinary cultivator? Surely if the analysis shows the soil contains much less phosphoric acid than is contained in average soils it needs phosphatic manure, or if a soil is much poorer in potash than average soils it needs potassic manure. On the other hand, when a soil contains large proportions of phosphoric acid or of potash applications to such soil of phosphates or of potash would be superfluous. "But," Dr. Dyer says, "in the great majority of cases a soil analysis, as usually carried out, leaves us really in the dark except as to broad (and admittedly valuable) general facts, as richness or poverty in lime, preponderance of sand or clay, or peat, &c."

This decrepitude is explained in the fact that an ordinarily made analysis "shows the total per-centage of its constituents, or, at any rate, the per-centage dissolved by strong mineral acids, without reference to the fact that only a small proportion of this total may be available for plant use."

The pamphlet proceeds to state at length, and in a number of tables from a number of sources, why such things should be and are, also how to determine the available resources of soils in phosphoric acid and potash by new and better methods. The agent used was citric acid solution, and the per-centages of solvency are in ratio to that of the acid employed. The idea of using citric acid is based on the circumstance "that the chief solvent agent for soil 'minerals' is the root sap of the plant," and it is shown "plants help themselves to a part of their mineral food by means of the solvent action of their acid root sap on the particles of soil with which the rootlets come into contact." Reference is made to Sachs and Philip Miller (gardener to the Society of Apothecaries in 1733) as classical and practical observers of the acidity of root sap.

Then follows tabulated statements of 100 root-acidity determinations, the plants being taken from twenty different natural orders, in terms of hydrogen and terms of crystallised citric acid. The table is very interesting, and shows that "fine roots," in all cases, have more sap acidity than "thick roots." This inculcates the importance of active feeders—abundance of fibrous roots, which are accelerated by surface dressings. The tables also show the difference in the capability of plants to help themselves to the minerals, and thus supply themselves with phosphoric acid and potash. Marsh Marigold (*Caltha palustris*) has acidity, per cent., in roots (in moist state) equal to 0.81; Celery, 0.93; Forget-me-not, 0.81, which is suggestive, as they are moisture-loving plants, of their deriving the acidity directly from the soil. Thrift has 1.61 per cent. of acidity in its root sap; Evening Primrose, 1.54; Strawberry, 1.53; Geum, 3.69; Alyssum, 1.00; White Clover, 1.00; therefore root-sap acidity cannot possibly be derived from the soil, but is manufactured in the plants for the express purpose of dissolving minerals and supplying themselves with phosphoric acid and potash. The pamphlet also treats of agricultural soils, both manured and unmanured, and with different manures, showing the available, the amounts of phosphoric

acid and potash as ascertained by treatment with a 1 per cent. solution of citric acid.

The availability or otherwise of phosphoric acid and potash in soils as food for plants is really the grand secret to unravel, so as to be able to manure economically, and at the same derive the most value from the applications of phosphates and potassic manures. This appears to be clearly determinable by the citric acid solution test—the method of Tolleus and Stutzer, and so ably experimented on and exemplified by Dr. Dyer, who says in conclusion, "A 1 per cent. citric acid solution appears then to give indications fairly bearing out the manurial properties of phosphatic materials as recognised by experience in the field; it approximates fairly well to the average strength of the natural solvent (root-sap) used by the plant itself; and, tested by the result it gives on soils of known history and condition, it appears likely to afford a not unreliable means of gauging, as regards the available mineral constituents, the probable fertility of the soil itself."

Such result means the saving of millions of money, for it must be conceded that manure is strewn on land in many cases for no well ascertained reason, and in most, for a very problematical object.—G. ABBEY.

UMBERSLADE HALL.

ON a hot day last autumn three Warwickshire gardeners had by common consent made bold to leave the crisp fast falling leaves, browned lawns, and even the engrossing Chrysanthemums of their own locality, to see how things fared with a brother gardener of the county, from whom a hearty invitation to "come and see" had been recently repeated. A short ride by rail brought us to Knowle station, which is situate about midway between Birmingham and Warwick. Here we found a conveyance to take us to Umberslade, the residence of G. F. Muntz, Esq., which is four miles distant from Knowle station. We started on our pleasant drive through a country not remarkable for bold rugged hills or extensive landscapes, but incomparably pretty in the graceful flowing outline of its undulating surface, which was marred only by the grey brown colour of the pasture, at a time when they should have formed a verdant setting for the fast-changing tints among the trees.

As we approached the main entrance a fine view was obtained of the many stately specimens of *Wellingtonia gigantea* which the soil at Umberslade evidently suits. The trees are planted on each side of the carriage drive at great distances apart; they vary in height from 40 to 60 feet, and being perfect in outline from base to summit, add a feature to the surroundings which will continue to increase in prominence as growth proceeds, till in time they will form a conspicuous landmark for miles around. Each tree is surrounded by a substantial fence, and there are plenty of evidences to show they were well planted and have been well cared for since, the result being that few places can boast of so many fine specimens, of which their owner may be justly proud.

Following a fine belt of trees which skirts the park on one side we came to the gardener's cottage, in front of which a plot of really green lawn came as a welcome surprise after seeing the browned pastures around, and helped to show up to advantage the brightly coloured flowers in the window boxes and nooks near by. Under the guidance of Mr. T. Pritchard we proceeded at once to the kitchen garden, which is one having advantages many may have wished for during a summer like the past. It is oblong in shape, running almost due north and south, with a walk edged with a neat grass verge going from each end to a large sunk circular tank in the centre; side walks, which cut the ground up into convenient quarters, also converge to the same point. The great feature of this garden is that it slopes regularly from each end to the central tank and the walks which run on either side of it. Both north and south aspect are thus obtained, the benefit of which all practical gardeners will at once perceive. During the past season this advantage was more pronounced than usual. Many crops, which were obviously suffering greatly through drought on the southern slope, were on the opposite one in a much more flourishing condition. A notable illustration of this disparity was afforded by a bed of Cauliflowers; on that portion of it which received the full glare of the midday sun the plants lacked that sturdiness and vigour which, during ordinary seasons, they possess. The leaves were, moreover, too blue in colour to be satisfactory. From the very point that the bed commenced to ascend the northern slope a marked improvement in the vigour and colour of the leaves was apparent, and towards the centre of the slope the plants were in better condition than any I have noticed last season. Fine heads of Early Warwick Cabbage were also ready for cutting in an adjoining quarter. Standard Apple trees were carrying very heavy crops of well-coloured fruit, Pears on walls and pyramids being also plentiful. One branch of Louise Bonne of Jersey grafted on an old strong growing variety was especially satisfactory. Mr. Pritchard is a great believer in adopting that practice with this favourite variety. Pears grown as oblique cordons find much favour here. Grown on this system I saw in the fruit room fruits of Pitmaston Duchess weighing 1½ lb., Duchesse d'Angoulême gathered some time previously being almost as heavy.

FRUIT AND PLANT HOUSES.

The glass houses are arranged at each end of the kitchen garden. Direct communication is obtained between them by means of the

central walk already referred to, from each end of which the view obtained of the garden and opposite houses is extremely good. A small hip-roofed house which we first entered contained Tomatoes, which were growing from the bed at the back to the apex of the roof. Ne Plus Ultra and Golden Queen are the two favourite varieties here, where they bear heavy and continuous crops of very large fruits. The front stage of this house was filled with Begonias of a superior strain, the flowers being large, of fine form, and extremely varied and beautiful in colour. A few fine varieties of those old and much-neglected Tydæas were flowering freely at one end of the house, and although placed in juxtaposition to gorgeous Begonias of modern times, still appeared quite worthy of being cultivated in our best gardens.

A glance at the vineries showed that the cultivation of Gros Colman is well understood here, for notwithstanding heavy crops many of the bunches were perfectly coloured. No fault is found of the quality of this variety here; on the contrary it is especially liked, and other sorts are being cut out to make room for Gros Colman. I invariably find that wherever it is well coloured the flavour is never inferior.

We next entered the substantial orchard house of modern construction. Here the back wall is covered with trees trained to a wire trellis, and others are just covering a curved trellis in the centre of the house, a walk running between the front of this and the front of the house. I have frequently advocated the training of both Vines and Peach trees at a greater distance from the glass than is usually practised, and was glad to see the plan adopted with such success here. The trees on the circular trellis were at least 3 feet from the glass at the nearest point. Under such conditions the foliage is more easily kept healthy and free from insects, so that the best results may be obtained. Tomatoes were also growing in this house wherever room could be found for them without interfering with the Peach trees. The varieties were those previously enumerated, and many of the fruits were of extraordinary size.

Two light span-roofed houses near by have previously been devoted to Pine growing. This is, however, being gradually given up, not because they are not well grown, for healthier "Queens" than those which are to be the last at Umberslade I have never seen. Those who have seen the many fine Pines exhibited from there will, I am sure, quite understand this. It is thought, however, that the houses may be turned to better account for growing Melons, Dracenas, and Crotons.

We then passed down the central walk to the other end of the garden, where the large conservatory is situated. This is fitted with a patent system of glazing, happily now obsolete, but it is a source of constant regret at Umberslade that it should ever have been invented. The roof is heavy, dark, and improperly ventilated as well, and the structure only adapted for growing such as Palms, Camellias, Acacias, and similar plants. The house is, however, made to look attractive with a variety of plants, some of which thrive better than one would expect them to do under the circumstances. *Gloriosa superba*, with many expanded flowers, was exceedingly effective. *Dipladenia boliviensis* is found to thrive well also, and flower freely throughout the summer. *Bougainvillea glabra*, trained up the roof of the central division, was also satisfactory. This conservatory is in three divisions, the lofty central part having two side wings. In the cooler one of them good plants of *Lapageria alba* and *rosea* are trained to the roof, Camellias, Oleanders, Acacias, and other plants occupying the central stage, and Geraniums and Begonias the side ones. Just outside this house are several splendid globular specimens of Portugal Laurels, perfect in shape and the picture of health.

THE FLOWER GARDEN.

From this point we passed through a winding shrubbery walk to the flower garden. This has been remodelled and considerably enlarged during the eighteen years Mr. Pritchard has been at Umberslade. The walks are well laid out, having graceful flowing curves, which avoid formality on the one hand and unnecessary bends on the other. Following the outer walk we came to fine belts and clumps of ornamental shrubs, edged with a grassy bank, which slopes to the walk, and is terminated by a rustic summer house. A little further on a large oval-shaped bed elicits pronounced expressions of admiration. Although extremely simple in its arrangement, the effect produced was both novel and striking in the highest degree. Lines of *Calceolaria floribunda* and *Ageratum Lady Jane* were planted alternately throughout the bed, which was edged with *Dactylis glomerata variegata*. Those on the look out for beautiful combinations of colour for this year's bedding will do well to note this arrangement. Still further on to the right of us the cool waters of a beautiful lake sparkle like diamonds when the sunbeams catch them between the bordering trees. A large winding bed near by was planted in the centre with Petunias, a broad band of Phlox Drummondii coming next, followed by outer lines of Indian Yellow and Manglesi Pelargoniums, *Ricinus Gibsoni* being used as dot plants. The tasteful blending of colours and informal surface thus produced combine to render the effect both unique and beautiful.

Crossing the lawn we came in sight of the principal group of beds, situated at the foot of a terrace walk which runs round this side of the mansion. A glance at these was enough to show that we were viewing the work of one who is an adept in the art of flower gardening. Each bed seemed perfect in its colour, arrangement, growth, and high keeping, and by a judicious use of such bold and graceful foliaged plants as *Ricinus Gibsoni*, *Melanthus major*, and *Eulalia japonica zebrina*, the

surface is well broken, and bright colours sufficiently subdued. Amy Hogg Pelargonium, with a broad edging of Golden Harry Hieover, amaranth, edged with Countess of Hopetown Viola, and Henry Jacoby, also provided with a suitable edging, supply bright and telling colours. Another large winding bed, with rounded ends and a circular centre, planted with Begonias, Coleus, and Fuchsias, with Countess of Hopetown Viola as an edging, looked wonderfully well. Smaller beds of Madame Crousse Ivy-leaved Pelargoniums, with a bold leaved central plant (*Melanthus major*) gave just the shade of colour wanted.

Some carpet beds made it apparent that Mr. Pritchard, who was one of the flower garden foremen at the Crystal Palace when Mr. Thompson won such widespread fame for the carpet beds there, has turned the valuable experience gained in those days to good account at Umberslade, for the whole set of beds under notice were designed, planted, and kept in the best style. I was particularly struck with the effectiveness of *Spergula aurea* where used for filling in panels, and surrounded by *Alternantheras* or *Herniaria*. Passing from the flower garden we reached the park, near the main entrance to the mansion, and admired the stately colonnade and undulating ground in front. At the base of sloping ground another long stretch of water is seen, on the opposite bank of which several splendid specimens of *Picea nobilis glauca* have evidently found a congenial home.

In addition to the charge of the gardens Mr. Pritchard is also forester and estate manager. That he is the right man in the right place may be clearly seen by the good work he is doing on all sides. His task is rendered all the more interesting to him on account of the good understanding which exists between employer and employed. The inventive genius of the owner of Umberslade is seen in all directions. Garden seats are made with a spring back, which closes over the seat when not in use, thus keeping it always dry and clean. Fences are made of a combination of wood and iron, so arranged that no part of the wood is beneath the ground. Waggon, carts, and other appliances in use on the estate are made in the home workshops after Mr. Muntz's own plans. The whole place has an air of busy industry about it, as well it may, for both machinery and labour are freely employed, and the greater part of the fitting and building on the estate can be done by the home workmen. In this way a thriving colony is established in a purely rural district, and there are not wanting evidences which unmistakably show that happiness and contentment are by no means strangers to the inmates of the favoured English home.—H. D.

A TRIP TO ANTWERP—WITH REMINISCENCES.

WHAT! not done yet? No, not quite. Belgium is not a large kingdom, but there is a good deal in it. Nor is Antwerp a large city as compared with London, but it contains much to interest the visitor. If he enjoys the antique, he can have it in the conglomeration of gables in the narrow streets of the "old" city, and the architectural adornments of graven images; while if he desires more room, with modern surroundings, he may find it in the broad sweeping boulevards of the "new." If he is of a maritime disposition he may revel in the docks and get mixed among ships of all sizes and from all nations; if of an ecclesiastical turn of mind there are famous churches and the historic cathedral, with always someone ready to show him round and take the "bit o' siller" that may be offered; if the tripper is artistic in his tastes there is the grand picture gallery and splendid works of the old masters. If he should feel thirsty, ample provision is made for assuagement everywhere. Should he, as is natural, find himself in the Exposition Internationale, he will have the choice of some 130 restaurants, with invitations in various languages, to satisfy himself therein; while should he pass over the meat and under the portcullis, guarded by gay halberdiers, as he should, and may for 10 centimes (a short weight penny) into "Old Antwerp," he can, if an old sign speak true, a fac-simile of one in 1500 and something, have his hunger appeased without eating. This is what it says:—

Pitje Patjie Poe, Die wat drinken koopt, Kryght wat eeten toe.

It is presumably meant for poetry, but does not seem particularly euphonious, especially when struggling from the lips of the unsophisticated Britisher. Try it. The old patter, it may be assumed, means something of this sort: "He who drinks in this shop will want nothing to eat." Perhaps the "bock" was stronger in the old days than it is now, for appetites do not seem to fail in proximity to the ancient hostelry; but whether the present time beverage be strong or weak it is a well merited compliment to the city to say that we never see the results of indiscreet indulgences.

Now we will turn to gardening, though it may be noted that when horticulturists have fulfilled the main object of their visit to a continental flower show they are prone to leave gardens alone as much as possible, and spend what little time they have in observing the "manners and customs" of the people around them. They will probably note more politeness—more frequent interchanges of habitual courtesies than prevail at home, and imperceptibly fall in with them in a more or less graceful (or lumbering) kind of way, for it is not to be expected that a brusque John Bull, 5 feet high and 6 feet round, can bow with exquisite grace, and it is, in fact, rather amusing to see him trying. The journalist who is a reflector of human proclivities has to leave the gardens with the rest, mix with the crowd, and tell the story truly (more or less) or he may as well remain at home; yet, however

great the counter attractions, the old love *will* sooner or later assert itself.

It has been said, libellously no doubt, that a maxim of an innately valorous people is "If there is a head hit it." With more truth it may be said in respect to the lovers of our gentle craft, "If there is a garden go in it." So zealous and determined are some votaries that they can scarcely be kept out if there is a garden within reach. Some enter from curiosity, some for pleasure, some for information, some to sell something, some to beg, some to—we will say fetch something that they think ought to be in another place. Let us hope there are none of this latter tribe in Belgium. Our friends there may, perhaps, not understand it without an example. Here it is.

Not very long ago a certain man took great pride in his garden—his front garden in a London suburb. His aim was apparently to "cut out" all his neighbours in floral decoration. He obtained beautifully flowered specimens of Begonias, Petunias, Pelargoniums, and Marguerites, plunging the pots in the central bed and side borders. Passers-by lingered to admire. One morning a cab stopped. It had rubber tyred wheels for ease and quietness, especially quietness. It was very early in the morning—two o'clock. A lady and gentleman alighted, carefully removed the cherished plants, and drove away with them, an invalid in an adjoining house whom the "silent" cab disturbed watching them the while from an upper window, but unable to prevent the removal. Those plants were clearly in the wrong place according to the ideas of the admirers who had taken so much trouble to, as they thought, put them right.

Great is the attractiveness of flowers, and many the wants of those who love them. We go into a garden, admire something, "want" it, and take steps to obtain it. These steps are of a diverse order. One person will make up his mind in the best of all ways—*i.e.*, take down the names of plants he desires to have, and order them from the nurseries. For obvious reasons all flower lovers cannot do this, and some who can appear to prefer different methods. One floral diplomatist, when he sees a plant he would particularly like, speaks glowingly not only of it, but of something he has at home, and which he will have pleasure in sending to the visited garden. Possibly it may be already there; but that does not matter so long as the offer results in the diplomat taking away with him what he covets. This he will propagate, and retain for similar glorification and use when on further travels. Another astute negotiator keeps his garden stocked with the cream of the collections from all the gardens round about in this way. He tells his man when any gardener from So-and-so calls he is to be taken into the house, and the butler and cook will know how to treat him; then when the gardener man pays his return visit, as he cannot be similarly treated, he is offered as compensation anything he likes from the garden, and so the object is gained. It is clever, and regarded as good business, though some persons are wicked enough to call it by another name.

The interchange of cuttings and plants in a friendly way and to a reasonable extent, not indulged in through motives of cupidity, is both legitimate and desirable, for the custom adds greatly to the pleasures of owners of gardens innumerable. Friendships are made and sustained through and by the agency of flowers. They form links in the chain of sympathy that binds together men and women of kindred tastes, and may live, as many have done in the past, and will in the future, to be cherished as souvenirs of distant friends or as memorials of those who have passed away. Moreover, the gift of a few plants or cuttings has often been the means of fanning the latent love for flowers into a living flame that must be kept burning by fresh acquisitions, obtained no matter at what cost within the means at disposal, and occasionally, perhaps, outside them. Happy are those who have the love, also both the means and the will, for gratifying it, in the culture of those plants and flowers which afford them the purest, the most wholesome of pleasures, and against which the finger of scorn and the voice of faction cannot be raised.

"Do you remember the few plants you gave me, and persuading me to erect a greenhouse five years ago? I did not know that I cared for plants till then, and hardly know what to say to you now. My other houses have cost me £2000, and I have spent £400 in plants this very year, besides papers and books that I should never have thought of reading but for you. But you had better come and see me." Such is the citation from a letter in possession of the writer from a prosperous City man whose surplus wealth once went in a different direction, the change being effected in the manner described. We must not, then, begrudge the giving of a few plants, or indiscriminately reflect on those who interchange from the pure love of so doing; but chronic beggars belong to a different category.

Then there are individuals who, when they read about something that has been favourably depicted as flourishing in a particular garden, cannot restrain themselves from writing to the gardener for a supply on certain terms suggested, when at the same time the plants could have been found in sundry catalogues and obtained through nurserymen. A writer in the *Journal of Horticulture* received so many letters of this nature that he was driven to suppress his identity. It is natural for lovers of plants to "want" those which they may admire the most, and it is fortunate when these are easily purchaseable. One of the most admired plants in a Belgian garden in May was of a dwarf and lowly character, but a sheet of chaste beauty, putting all others of a great collection in the shade at that particular time, and it was for several weeks a chief feature in the flower garden—*Phlox canadensis*. Is it *P. divaricata*?

For this plant Messrs. Paul & Son, Cheshunt, obtained a certificate

at one of the R.H.S. spring meetings of the present year. Individually the flowers attract by their shining bluish lilac colour, but much more so in a mass, as was shown in a large pan in Messrs. Ware's fine collection at the Temple Show. In the Chester (Dickson's) collection we find *Phlox canadensis* (*divaricata*), and if it grows and flowers as freely in British gardens—and there seems no reason why it should not—as it was seen in a garden near Antwerp, it ought to find its way everywhere, and be as effective in the spring as *Aubrietias*, *Alyssums*, *Iberises*, or any other plants that contribute bold masses of colour in the early months of the year, yet differing from them all.

The garden in which it was so boldly yet charmingly assertive was that of the great Belgian amateurs, Mr. and Mrs. Everaerts, near Antwerp. They are among those who find happiness in the most interesting garden they have formed, and which they lovingly and liberally maintain—a garden rich in trees, shrubs, and nearly all kinds of Alpine plants that nestle in nooks, and hang in streaming masses of colour on the great rockery, as well as of herbaceous plants which luxuriate in the borders that extend alongside the long curving walks of the pleasure ground. It is a garden of luxuriance rather than of stiff and prim neatness. The autumn leaves are left to decay and enrich the earth in the shrubberies, and surface mulchings of manure impart vigour to the growth of the



FIG. 82.—PHLOX CANADENSIS.

border plants. Even the large expanse of grass beyond the borders is encouraged to grow, and was nearer 3 than 2 feet high on the 11th of May. It was in this garden when *Rhododendrons* were in full beauty, also dells of hardy *Azaleas* all aglow with flowers, when the sides of the miniature Alps were clothed in pink and purple, blue and gold, produced by *Saponaria ocymoides*, *Aubrietias*, *Myosotis*, and *Alyssum*, with many other sparkling gems that the beds of *Phlox canadensis* exerted their powerfully attractive force. They were large beds containing thousands of spikes and myriads of flowers, forming dense cushion-like masses of shimmering bluish mauve or lilac, about a foot above the ground. Some persons appear to regard *P. canadensis* as synonymous with *P. divaricata*, while others regard them as distinct. In Paxton's and Johnson's Dictionaries the latter species is said to have been introduced in 1746 and the former in 1825. Who can settle the point?

Those who wish for a floral treat in spring should do as Mrs. Everaerts did—purchase plants of this *Phlox*, increase them, then not dot one here and there in an isolated manner, but fill some beds with them, and await the result. It is not until seen as thus represented that the full decorative value of the plant can be displayed, though a small spray (fig. 82) shows the character of the flowers. *Phlox canadensis* was described as absolutely hardy, and gave no trouble whatever in preserving and growing. Mrs. Everaerts has heard of a

white variety, and if it is to be found in Europe it will not be long before it has a home in the cherished collection near Antwerp.

The evening's visit was worth the voyage across the strip of sea and merry little dance home again, for the waves when in a sportive mood can play ducks and drakes with the best of steamers, and render the limbs of landlubbers useless for the time. There is yet another Belgian garden that demands a few words of reference, to follow in due course.

LIVERPOOL NOTES.

EUCHARIS AT ALLERTON PRIORY.

ALMOST every week questions are being asked relating to failures in growing the Eucharis, and in many gardens these beautiful stove flowering plants are by no means successfully cultivated. This is not the case at Allerton Priory, where Mr. J. J. Craven, the noted fruit grower, has demonstrated that he can grow Eucharis equally well. Commencing some eighteen months ago, he divided the contents of six large pots, placing them in 9 and 10-inch pots, using good fibry loam and sand, the bulbs being potted rather deeply. A square bed with bottom heat in one of the stoves was filled with good sweet leaves, the pots being partially plunged in this material. The atmosphere of the house was kept moist, water being very sparingly applied to the plants until they commenced growing, when it was increased. The drying off system is not adopted, but the plants are sparingly watered for a short time after flowering is over, a little chemical manure being used as a top-dressing.

At the time of my visit the bed contained forty plants in perfect condition and profusely flowered, some of them carrying twelve and thirteen spikes, averaging five flowers on a spike. The same plants had previously flowered in November and December. Questioned as to the disease, Mr. Craven was of opinion that indiscriminate watering caused more failures than anything else. Nothing will sooner give a sickly appearance to plants, however healthy they may be, than exposing them to strong sunshine; therefore shade by all means. I firmly believe that to a want of inattention in this matter many failures may be attributed.

A PRETTY AND USEFUL COMBINATION.

This is perhaps the best way that I can describe a charming arrangement I recently saw at Oaklands, Aigburth, the residence of A. L. Jones, Esq. Here Mr. J. Bounds, the gardener, has to supply a great number of flowers for cutting, as well as to keep the houses gay, and variety in such is always useful. On a stage in the stove were arranged *Begonia nitida*, *B. nitida alba*, and *rosea*, the deep colour of the latter showing up well against the white and pale flowers of the other two, the whole forming a perfect bank of bloom, an edging of *Panicum* giving the requisite finishing touches. As regards usefulness, everything is in their favour. The cuttings were taken about this time last year, placed in small pots in a compost of loam, leaf mould, and sand, and being kept in a warm temperature the plants were soon ready for a shift into 6-inch pots, in which they are flowered. When well established the plants were removed to a cool frame, where they remained until autumn, when they were transferred into a warm house, where by November they commenced to flower freely. Mr. Bounds said that he had been able to cut two and three times a week for table decoration, besides keeping up the display in the stove. Associated with Maidenhair Fern the effect by gaslight is very rich. To all who want an abundance of flowers during the winter and spring, I advise them to lose no time in procuring a stock, follow out the system of culture as briefly recorded above.—R. P. R.

RIPENING AND PRESERVATION OF FRUITS.

(Concluded from page 456.)

THEN we have two kinds of tin plates, the "bright" and the "terne." The latter contains much more lead alloyed with the tin than the former. In Germany the law requires that tin plate used for canning fruit shall not contain over one per cent. of lead. In the chemical laboratory of the Department of Agriculture at Washington the tin of some fifty cans, in which Peas had been put up, was examined for lead. Thirty of them were found to contain from 1.2 up to 13 per cent. of this poisonous metal. Then, again, solder rich in lead is easier to handle than if poor in this metal. In Germany canners are prohibited from using solder with more than 10 per cent. of lead in it. The solder of twenty-four cans, examined in the laboratory above mentioned, was found to contain from 43 to 65 per cent. of lead. There is no question but that the use of lead, or of materials containing much lead, that are to come in contact with articles of food, and especially of acid food, is to be strongly condemned. And further, it is very possible that the poorer the quality of the materials put into the cans and coming in contact with these alloys rich in lead, the greater the danger of getting some of the lead and the tin also into the contents of the cans. How far such materials are used in the canning of fruits I cannot say, but if used so often as they are in the canning of vegetables it is reasonable to suppose that they would often be used also for fruits.

In respect to the drying of fruit, we have again a temptation to depart from scrupulous honesty in the use of sulphur or of sulphuring to an excessive extent. You all know that Dr. Hilgard, Director of the California Experiment Station, has for some time been carrying on a crusade against so much sulphuring. He does not believe in the bleaching any way, and calls the handsome light coloured slices of dried Apple "whitened sepulchres." He believes that this sulphuring may

be used to cover dirty and damaged fruit, and that fruit excessively sulphured is less digestible, because it contains so much of this antiseptic, all antiseptics, whether borax, salicylic acid, or sulphites being unfavourable to digestion when taken into the stomach with the food. All fruit when dried darkens owing to the action of the oxygen of the air upon certain constituents of it, and he thinks that this colouration, which is in itself perfectly harmless, "should be looked for by every consumer as the natural mark of an honest, unmanipulated article." In all this I must allow that I am inclined to agree with him. At any rate, all honest men will agree that only clean and perfect fruit should be used for drying, such as needs no manipulation of any kind to cover up defects. All will agree that any form of manipulation which can be used to conceal such defects has its dangers as long as there are unscrupulous men engaged in every kind of business, and that where a large number, honest and dishonest alike, are engaged in the production of any manufactured article, the extensive trade in that article thus brought about may be seriously damaged by any dishonest practice, and that it is usual in such cases that many honest people suffer for the misdeeds of a very few rascals. Even carelessness may bring about a like result. Fruit dryers became careless in the use of the zinc trays in their evaporators, and zinc got into the dried fruit that went to Germany. It may be and it may not be that the German Government at about that time wanted an excuse for putting some obstacle in the way of the importation of so much fruit, and pounced upon this occurrence of zinc in it as a pretext. But, at any rate, if the zinc had not been there, the chances are that they would not have been able on any other pretext to hurt the trade so much as they did.

But the public has acquired a perverted taste, and demands the "whited sepulchres," so till the public taste can be reformed it is good business method, of course, to conform to it. But let it be done honestly, by using and insisting that all shall use only the best material, and only just so much sulphuring as is necessary to bleach it to the desired point. Mr. Green of the Ohio Experiment Station stated in a paper read before the Michigan Horticultural Society that some varieties of Apples, such as the Fameuse, need no sulphuring in order to get a white evaporated product, and he would not use sulphur at all in the evaporator itself; he would merely expose the fruit to the fumes for a short time as soon as prepared for the drying. Thus he would use it, not to bleach out a dark colour already formed, but as a preventive against any appearance of discolouration.

Concerning the preservation of fresh fruit a rather singular method is proposed by Monclar in a recent volume of the French "*Journal d'Agriculture Pratique*." It consists simply in bedding the fruit in lime. He gives the following general statement of the results of his experiments:—

1. The lime does not in the least attack the skin of the fruit, even after prolonged contact.
2. The fruit does not dry any more in the lime than in the air.
3. No change takes place in the fruit other than such as is the natural consequence of its evolution.

This method was tested on Oranges, Artichokes, Cherries, Gooseberries, Prunes, Tomatoes, Onions, Potatoes, Grapes, Apples, Pears, Sugar Beets, and Chestnuts with their shells removed. There was certainly no lack of variety in the material used. Not every test was successful. Tomatoes kept well for two weeks, and half of them for nearly five weeks. In another trial, Tomatoes picked before fully ripe in order to save them from an early frost, and put in lime October 22nd, were good till January 15th. Pears of a variety that he had been unable to keep beyond December in any other way kept well in lime till the middle of April. The most interesting results, and it seems to me the most striking, were obtained with Grapes. Three varieties were packed in lime on September 13th. The first examination of them was made December 22nd, when all were in good condition. April 15th two bunches of one variety were taken out, one of which was fairly well preserved, the other very well; all of one of the other varieties was in a bad condition and were removed. On May 2nd the box was emptied, and all of those varieties were in excellent condition. In another trial, made in the preceding year, the last bunch of Grapes in the box was taken out July 1st, when half of the berries were well preserved and had an exquisite flavour.—G. C. CALDWELL (*Western New York Horticultural Society*).

ON THE RIVER.

ON Wednesday, June 13th, the employés of Messrs. J. Cheal & Sons, Lowfield Nurseries, Crawley, held their annual excursion. The programme for the day was as follows:—

"Leave Crawley 6.49 A.M., or Three Bridges 7.7; arrive at London Bridge at 8.17. On board the steamer, specially engaged, at London Bridge (Surrey side) 8.30. Go down the river to the Tower Bridge and docks; then proceed up the river, probably as far as Richmond, and return to Kew Bridge. Luncheon at 1 o'clock at Kew Bridge. The entrance to Kew Gardens is close by, and the grounds are open free. Special objects of interest are the Palm house and a large number of other greenhouses, rock garden, lakes, Chinese pagoda, gallery of Miss North's paintings, extensive woodlands, and open park for games. Return from Kew Bridge at 6.30 to take passengers to Battersea (for Victoria station); or the return may be made by any train from Victoria at 7.8, 8.50, or 10.5; or from London Bridge at 7.20, 9.10, or 10.20."

As may be imagined, with such a tempting day's enjoyment before it the party, under the guidance of Mr. Joseph Cheal, arrived at London

Bridge Pier at 8.30 A.M. in the highest spirits and eager for the fray. A few ladies, including Miss Cheal, wives, sisters, daughters, and cousins of the employes, ensured brightness and gaiety; while such "visitors" as Mr. Glen, Worth Park, and Mr. Prentice, Paddockhurst, lent weight to the party, which numbered upwards of 100.

After a short delay, due to a misunderstanding as to time and place with the Victoria Steamboat Company, the ss. "Rose" (peculiarly applicable) commenced her trip down the river for a short distance, sufficient, however, to allow of a view being had of the magnificent Tower Bridge and some of the docks, when the steamer was put about and the trip up the river was commenced in earnest. London, Southwark, and Blackfriars Bridges were quickly passed, and soon we were running alongside of the Houses of Parliament. A steamer called the "Daisy" was passed hereabouts, and was honoured with a song in which its name held a prominent part. The air of Crawley is certainly conducive of strong lungs, for though the chorus was impressive it could scarcely be termed harmonious. We rapidly made our way past Battersea, Wandsworth, Putney, and went full speed over the championship course, though I am doubtful if we made a record, unless it was for jollity.

Kew was passed at 10.30, and at 11.0 we reached Richmond. Boating and other amusements were indulged in for about an hour, when the steamer was again requisitioned to convey us to Kew and dinner. After the repast, which was of a substantial character, a few words of encouragement and congratulation were said, and then the excursionists dispersed, to amuse themselves at their own free will. At 6.30 the *reveille* was sounded, and the run to London commenced, Victoria Station being reached in good time for the train.

The day had been a long one; everyone seemed to have enjoyed themselves, and by the time they reached Crawley would be ready for a well-earned rest.—H. J.

THE YORK FLORAL FETE.

JUNE 13TH, 14TH AND 15TH.

THE thirty-sixth annual Exhibition was held on the above dates in the usual grounds, and although rain fell heavily on the 12th and through the night, rendering the ground very unpleasant to the exhibitors and judges, a bright day on the 13th made matters more comfortable for all, and there was a large attendance. It was a first-class Show, no vacant spaces being apparent, and with so many large tents to be filled in so short a time, it is most creditable to those who managed the exhibition, for the judges, six in number, working in pairs, finished in good time. The staging was well done, but the huge Pelargonium tent was crowded with specimens, and some had to be placed in another marquee.

Class I was for groups not exceeding a space of 300 square feet, and six groups were arranged for five prizes of £20, £15, £10, £8 and £5. Mr. W. McIntyre, gardener to Mrs. Gurney Pease, Darlington, was easily first with a grand group arranged in his usual masterly style. Mr. W. H. Simpson, nurseryman, Selby, was second with a very artistic group. Mr. John Sunley, Milford Junction, third; Mr. S. Hardcastle, York, fourth, and Mr. J. Smallwood, gardener to H. Leetham, Esq., Heworth, York, fifth.

Stove and greenhouse plants were well represented, and Mr. Letts, gardener to the Earl of Zetland, was first with a splendid exhibit of ten specimens; Mr. J. Cypher, Cheltenham, an excellent second. In the class for six stove and greenhouse plants Mr. Cypher was first with fine plants, in which a grand specimen of *Pimelea diosmæfolia* was conspicuous. All the other classes for stove and greenhouse plants, fine-foliaged plants, and Ferns were well filled.

An interesting feature of the Exhibition was the class for groups of Carnations, not less than fifty pots, which brought out six exhibits. The first prize went to C. H. Wilson, Esq., M.P., Warton Priory, Pocklington (gardener, Mr. A. F. Pike), for a superb group of "Malmaison" varieties. Mr. C. Turner, Royal Nurseries, Slough, was second for a fine group of various kinds, including the new and fine Lady Nina Balfour; Messrs. Laing & Mather, Kelso, were third. For three plants of the pink "Malmaison" Mr. C. Turner was first, and Mr. C. H. Wilson second.

Never has such an extensive and superb display of Orchids been seen at York. For ten Orchids, distinct, Mr. J. Cypher, Cheltenham, was first with grand plants, including *Dendrobium Jamesianum*, *D. thyrsiflorum*, *Lælia grandis tenebrosa*, and *Miltonia vexillaria*. Equal second prizes were awarded to Thomas Statter, Esq., Whitfield, Manchester (Mr. R. Johnson, gardener), and to E. Ashworth, Esq., Harefield Hall, Wilmslow (Mr. H. Holbrook, gardener), the latter having smaller plants, but containing some rare and beautiful kinds, amongst them being *Catleya Mossiæ* var. *Ashworthi*, a beautiful white form; *C. gigas imperialis* var. *Ashworthi*, large, well formed and rich in colour; and *C. Mendelli Blunty* var. *Ashworthi*, a snow white with creamy centre. For six Orchids, Mr. Cypher was first with grand specimens; E. Ashworth, Esq., was second; W. Bateman, Esq., Leeds, third. For three Orchids, Mr. Cypher was first; Thos. Statter, Esq., second; and W. Bateman, Esq., third. The other classes were also filled.

Pelargoniums, as usual, were a marked feature of the Exhibition, and York enjoys a celebrity for them. The immense tent always devoted to Pelargoniums was crowded, and the specimen Ivy-leaved and others found shelter in another tent. It was a very fine display, but not quite up to that of last year in weight of bloom, in some of the

doubles and Ivy-leaved especially. Mr. Eastwood, gardener to Mrs. Tetley, Leeds, a successful cultivator for twenty to twenty-five years, was well to the front throughout with grand specimens of great size and quality. His is a champion record this year. First for twelve Show, first for six Show, first for three Show, first for twelve Zonals, first for six Zonals, first for three Zonals, first for eight doubles, first for four doubles, third for six Ivy-leaved, and second for three Ivy-leaved varieties. Miss Steward, York, and J. T. Hingston, Esq., were the other principal exhibitors in the classes for Show Pelargoniums. Mr. C. Turner, Royal Nurseries, Slough, staged twelve admirably grown plants of medium size, but the blooms had suffered in transit, and obtained the third prize. Mr. Turner was also first for twelve beautiful Fancy Pelargoniums.

Zonal Pelargoniums were very fine, monster plants from 3 feet 6 inches to 4 feet through, and such were Mr. Eastwood's twelve, masses of bright colours. Mr. H. Pybus, Monkton Moor, near Leeds, was second with fine plants; and Miss Steward third. All the numerous classes were well filled, and some very fine double flowered staged, but generally they showed the want of more sunshine.

Roses were generally good, but little improvement in the cultivation of the plants in pots was noticeable. The cut Roses, however, made a fine display, and four exhibits of seventy-two blooms, in not less than thirty-six varieties, were staged. Mr. Mount of Canterbury was first; Messrs. May, Bedale, second; Messrs. Harkness & Sons, Bedale, third; and Mr. F. Cant, fourth. For forty-eight distinct Roses, Mr. G. Mount was first, Mr. F. Cant second, Messrs. May third, and Messrs. Harkness and Sons fourth. For thirty-six distinct Roses, Mr. Mount first, Mr. F. Cant second, and Messrs. May third. All the other classes were also well filled.

Some beautiful epergnes and baskets of flowers were staged, also bouquets, Messrs. Perkins & Sons, Coventry, being first for baskets and in the three classes for bouquets.

For twelve varieties of stove and greenhouse flowers, two classes, one of them excluding Orchids, Mr. W. Finch, gardener to J. Marriott, Esq., Coventry, was well first with strong competitors against him. Hardy herbaceous plants were not so numerous as usual. Messrs. Harkness and Sons won a first prize with a fine collection.

Pansies were numerous, and three of the great growers from the north competed in the open classes. For forty-eight Fancies, Mr. J. Smellie, Glasgow, was first; Mr. A. Irvine, Tighnabruach, N.B., second; and Mr. A. Bailey, jun., Sunderland, third. For twenty-four Fancies, as well as for twenty-four Show varieties, Mr. Irvine was first, Mr. Smellie second, and Mr. Bailey third. There was a good competition also in the amateur classes.

Fruit was not so numerous as has been seen at York, but was good. In the class for ten dishes Mr. McIndoe, gardener to Sir J. W. Pease, Bart., was first; Mr. Edmonds, gardener to the Duke of St. Albans, second; and Mr. Tullett, Raby Castle Gardens, third. For six dishes Mr. McIndoe was first, and Mr. Wallis, The Gardens, Keele Hall, second. Mr. J. Hickson, Boston Spa, was first for black Grapes, and Mr. McIndoe for white Grapes. Well coloured Peaches and Nectarines, a few good Pines, and fine Melons, including Guntun Orange, a fine scarlet-fleshed variety, were staged.

For Messrs. Sutton & Sons' special prizes for six varieties of vegetables, Mr. McIndoe was first; Mr. Williams, gardener to the Earl of Feversham, second; and Mr. Smallwood, gardener to H. Leetham, Esq., Heworth, York, third.

Certificates of merit were awarded for *Browallia speciosa* major from Messrs. Clibran & Sons; Tuberous Begonias, Triumph, Lady Wantage, The Princess, Duke of Wellington, and *Gloxinia* Beacon from Messrs. J. Laing & Co.; *Caladiums* Assunguy and Baron Adolphe de Rothschild from Messrs. J. Peed & Son; Carnation The Countess, white self, from Messrs. Cutbush & Son; Fancy Pansies T. E. Martin, from Mr. A. Irvine, and Mrs. W. B. Smellie, from Mr. J. Smellie; Variegated Cabbage, distinct and bright for decorative work, from Mr. Geo. Hodgson, Hemsworth; and *Bougainvillea glabra* Sanderiana from Messrs. F. Sander & Co.

A large number of honorary exhibits were staged. Messrs. James Veitch & Sons, London, sent an extensive collection of cut flowers, including Pyrethrums, Delphiniums, *Gloxinias*, *Pæonies*, *Streptocarpus*, and greenhouse *Rhododendrons*, admirably arranged—a highly meritorious display. Messrs. Cutbush & Son, Highgate Nurseries, London, had a very extensive display of hardy cut flowers and plants, and their new border Carnation Countess, of fine form and pure white. Messrs. Clibran & Son, Altrincham, staged *Calceolarias*, cut Zonal Pelargoniums in bunches, and herbaceous flowers. Messrs. E. D. Shuttleworth & Co., London, sent hardy flowers and plants in pots. Messrs. Dicksons (Limited), Chester, hardy cut flowers—a good display. Messrs. Harkness & Sons, Bedale, a collection of hardy cut flowers. Messrs. John Laing & Son, Forest Hill Nurseries, London, new double Begonias and *Caladiums*. Messrs. Hugh Low & Co., Clapton Nurseries, London, a grand bank of *Catleya Mossiæ* varieties, staged with Ferns and other Orchids. Messrs. Charlesworth, Shuttleworth & Co., Heaton, Bradford, whose fine display included several plants of *Lælia tenebrosa*, *Vanda cœrulea*, well coloured, a fine rich spotted variety of *Odontoglossum crispum* and *Maxillaria Sanderiana*. Messrs. J. Peed & Son, Rongell Nurseries, London, a group of *Caladiums* and other plants. Messrs. Birkenhead, Sale, near Manchester, an extensive collection of Ferns; and Messrs. Sander & Co., St. Albans, a very fine group of Orchids, admirably staged with Ferns, and amongst them were many of the rarer kinds.

The weather fortunately continued fine throughout the three days,

and the Exhibition was well attended. The Committee and workers of the Show deserve great praise for their admirable arrangements, and early filling in of the prize cards and certificates.

[Roses are referred to in another column.]

COLCHESTER SHOW.—JUNE 13TH AND 14TH.

COLCHESTER is a decidedly pleasant town, and healthfully situated on a breezy hill. It has a prosperous look about it, and no such old-world dilapidated appearance as such an ancient Roman station might suggest. On the contrary, it contains many fine buildings, nearly all of a modern type, and in excellent order. The town no doubt was in holiday attire, and the inhabitants must have vied with each other in the decorations. The main streets were alive with colour, yet not gaudily but tastefully embellished, and not a few houses were embowered in greenery. The hotels were full, and streams of visitors wended their way through a delightful suburb to Lexden Park—a model site for a great Show such as that of the Essex Agricultural Society with horticultural and apiarian adjuncts.

The park—a close, dry, springy turf—was kindly granted by Captain Naylor-Leyland, M.P., and thousands of persons assembled therein. Hundreds of well-groomed farmers were there with well-bred tith that could “go,” and smart equipages; also hundreds more of a different grade, yet ruddy and happy looking. If rank “depression” was represented there one wonders what the sight would have been in a time of prosperity. The whole thing is a puzzle. In the old days that many pretend to long for, when corn was dear and live stock cheap, there were no such gatherings in provincial towns, no such appearance of wealth and well-to-do-ism, no such expenditure of money as was in evidence on Wednesday in last week, and all, or practically all, “out of the land.”

If all the Essex farmers are “poor” they have a happy way of not appearing so before the public, and there was no lack of real workers—one or two-horse-looking men, smug and cosy—who, with the labourers, seemed as if they had plenty to eat. Yet if we are to believe the newspapers Essex is in a state of grievous penury and almost hopeless adversity. Have some of these terrible newspaper men been writing up the troubles? There is no telling what those enterprising individuals will do to find pabulum for the public and make a little cash for themselves. With all the talk of England’s degeneration and continental prosperity there is not a provincial town in Europe, outside Britain, of the same size as Colchester that could have brought together anything like such a gathering as was seen at this Show last week.

There is good land, too, about Colchester, otherwise such splendid Roses as those staged at the Show could not be produced. It is not too much to say that among all the other exhibits—and many were highly meritorious—that Roses bore the palm, and in no other part of the floral department was the crowd of visitors so great as in the Rose tent. Mr. Grahame, one of the Judges, correctly describes the display in another column.

Liliums made a brave display, a bank of L. Harrisii from Messrs. Bunting & Son being such as is seldom seen, though Messrs. Wallace and Co. had a greater and choicer variety in smaller plants, while Rev. C. H. Berners had splendid examples of L. auratum. Those gentlemen were the chief prizewinners.

Apart from the 10-guinea prize collection of stove and greenhouse plants from Mr. W. W. Duffield, Chelmsford, the specimens exhibited were not particularly noteworthy except in this respect—those that were large were not fresh, while those that were fresh were too small. Ferns were admirably represented by Messrs. Green, Saltmarsh, and Duffield, who won the chief prizes worthily and well. Groups of plants arranged for effect were fresh, bright and clean, but in more than one instance too close and formally packed. Messrs. Saltmarsh & Son were the premier exhibitors, also in the class for baskets of plants—round flat hampers filled according to the taste of exhibitors, and which had a pretty effect. Show and Zonal Pelargoniums, Tuberous Begonias, Petunias, Gloxinias, and Calceolarias added brightness to the marquees in which they were arranged, Messrs. Saltmarsh taking the lion’s share of first prizes. There was a small but bright display of Orchids from Rev. A. C. Johnson and Messrs. W. L. Lewis & Co., with many other plants and prizewinners that cannot be enumerated.

Considering the earliness of the season the display of fruit was good for a local Show—several dishes excellent, Mr. Rogers of Rendlesham Gardens, and Mr. Messenger of Wolverston being among the chief successful exhibitors. Vegetables were also good, Asparagus splendid, such as is rarely seen exhibited. It is said to be extensively, as it is certainly well, grown around Colchester. This, the Roses and the Lilies, were the most admired exhibits. The Show was arranged under the direction of Mr. John Andrews, the well known Woodbridge amateur, and a visit was made the more enjoyable by meeting him and other members of the Committee who made the fleeting moments pleasant to all with whom they came in contact.

TRADE CATALOGUES RECEIVED.

F. Cooper & Sons, Bijou Nurseries, Alicetown, Lower Hutt.—*Chrysanthemums*.

Foster & Pearson, Beeston, Notts.—*Illustrated Catalogue of Structures and Specialties*.

R. Gilbert, Hyde Park Gardens, Stamford.—*Strawberry Catalogue*.

E. H. Krelage & Son, Haarlem, Holland.—*Chinese Pæonies*.

Ant. Roozen & Son, Overveen, Haarlem, Holland.—*Dutch and Cape Bulbs*.



HARDY FRUIT GARDEN.

Summer-Pruning Fruit Trees.—The main object of summer pruning is to concentrate a portion of the energies of growth into the wood which it is intended to leave for forming new fruit-bearing spurs, or to strengthen existing wood or spurs. Further objects are attained in the admittance of light to the interior of trees and bushes, without which neither spurs, shortened young wood, nor swelling fruit can utilise the advantages gained by the suppression of superfluous growth. Such treatment ensures the energies of the trees being usefully employed in the continual extension of long growths to be cut back in winter. Trees trained in any restricted form demand attention to this important detail of culture during the next few weeks. Whether the specimens are young or old, and it is desired to keep them compact and fruitful, the proper suppression of foreright shoots must be dealt with. Horizontally trained trees and cordons on walls, espaliers, pyramids, trained bush trees and cordons in the open may all be attended to as the state of the growths permit.

Effects of Non-Summer Pruning.—The more strong shoots are allowed to extend the greater root power will the trees have, because of the increased area of leafage able to assimilate food which incites the roots to greater action, whereby they become gross in character and produce future shoots of a like nature. The spurs surrounding the base of such shoots have support withdrawn from them, hence they are and remain weakly. The summer shoots, extending throughout the season unchecked, are a means not only of wasting vigour, but of causing a dense shade to the parts below and the interior of the trees.

Characteristics of Bearing Growth.—Stone fruit trees should not be rigidly restricted to spurs only. Where there is room young shoots may be laid in, the present being a suitable time to make a selection, gradually training them in position. Plums and Cherries can be managed on this system, fruiting spurs forming naturally on the young shoots along the greater part of their length the following season, and fruiting the next year. Spurs constitute the bearing parts of Apricots, young shoots also being freely laid in for the next season’s fruiting where room can be found, and the ripening process ensured. Peaches and Nectarines bear fruit also on spurs, but these are best only when they form naturally. The most prolific crops are taken from trees that are annually replenished with a supply of young shoots of medium strength. Summer-pruning with such, therefore, consists mainly of disbudding early in the season, thinning out badly placed growths and those which have failed to bear fruit, so as to allow room for training in young growths. Further pruning is done as the fruit is gathered.

Mode of Summer Pruning.—The most vigorous growth in all forms of trees is made towards the tops, and it is there where a commencement must be made in summer pruning. Growth proceeding from the centre will be found of medium strength, while at the base it is comparatively weak. Restriction of the strong uppermost shoots diverts the sap for a time to the weaker growths, strengthening them and enlarging the foliage. By gradually pruning severe checks to the trees are avoided, and the work is lightened because spread over a longer period.

The best time to summer prune is from the middle of June to the end of July, selecting the most forward trees the first. Operating at weekly intervals on each tree, dividing the growths into three portions, is a convenient method to follow. It is important that the leaves on the young wood left should be perfect and clean, as on them depends the feeding of the buds which will eventually prove to be fruit buds. Shorten the shoots to from three to six leaves, subsequent growths to one leaf. The leaves must be full sized. The basal leaves are not included, except in the case of Plums and Cherries. If shoots are thickly placed, as they are sometimes, thin out a portion entirely, as well as all thin, weak growths. The tips of young shoots are often curled and distorted in shape through the action of insects. Summer pruning is a great relief to such, the trees being ridged of much undesirable growth. Currants and Gooseberries are frequently infested in this way. The portions removed ought to be burnt immediately, not allowing any to lay about around the trees. Compact growing dwarf shoots that are assuming the character of fruit buds, though rather longer than normal spur growths, should be preserved intact, and not shortened at all.

Summer-thinning Weak and Crowded Growth.—Much benefit accrues to bush and standard trees by adopting the practice of lightly thinning out weak and crowded wood at intervals through the summer and autumn. The first of such raids may be carried out now if necessary, and the crop of fruit is not interfered with. It will relieve the trees, provide for a freer circulation of air among the wood left, and improve the contour of any specimen. Gooseberry bushes are subject to becoming crowded with growth, a large proportion of which cannot become well ripened without some restriction is employed. Summer-pruning Gooseberries is not so generally practised as formerly, partly owing to the ravages of birds among the buds in winter. Young, well-ripened wood of the previous year is found to be equally productive;

leaving a fair number of well placed shoots, judiciously thinned as soon as the fruit is gathered, results in securing good crops. One advantage of a little thinning in summer is that a better idea can be formed of the number of branches required when the foliage is present, and the tendency to overcrowding is thus diminished.

Layering Strawberries.—Some of the most forward runners may be pegged down on the surface of good soil in small pots partly sunk in the ground. Strong early plants are thus secured either for pots or forming fresh beds. Keep them moist until rooted well.

FRUIT FORCING.

Peaches and Nectarines.—*Early House.*—The fruit will shortly be all gathered, therefore admit all the air possible day and night. If the roof lights of the earliest forced house are moveable take them off after the trees have had full ventilation for a fortnight, and keep the foliage free from insects by forcible syringings. If there be any red spider use a solution of softsoap 2 ozs. to a gallon of water; if scale be present employ petroleum, adding a wineglassful to 4 gallons of water, with which has been mixed 1 oz. of washing soda and 4 ozs. of softsoap. The soda and soap should be thoroughly dissolved in hot water, and the petroleum kept well mixed with the solution during its application. Keep the borders well watered, affording liquid manure to weakly trees, which helps them to plump the buds, and mulch with short manure. Cut away the wood which has borne fruit to the shoot at the base intended to bear fruit next season, unless such shoot is required for extension. If there be a superfluity of shoots remove them now; they only keep air and light from the principal foliage, and hinder cleansing operations. Keep laterals and any gross shoots closely stopped.

Houses with Fruit Ripening.—The trees must not be syringed, but moderate moisture should be maintained until the fruit is ripe; even when ripe an arid atmosphere should be avoided, as it is highly prejudicial to the foliage. Water must also be given liberally at the roots. Admit air abundantly. In gathering Peaches great care is necessary, as the least pressure makes a mark and spoils their appearance. A piece of wadding should be held in the hand, and the fruit removed by gentle pressure, then laid gently in a padded basket or tray. A cool and airy fruit room is the best place to keep Peaches and Nectarines in after they are gathered.

Trees Swelling their Crops.—When the stoning is over the trees will endure strong heat without fear of the fruit falling. Afford tepid liquid manure to the roots of trees carrying full crops, and otherwise not too vigorous. Be careful in giving liquid manure to very vigorous trees, as it tends to over-luxuriance, and may interfere with setting and stoning in the succeeding year. Still, liberal treatment is necessary, such as light surface mulchings and copious waterings every week or ten days in well drained borders. Syringe twice a day to keep down red spider, ventilate early, keep the temperature through the day at 70° to 75° artificially, and 80° to 85° with sun heat, and close it sufficiently early to increase it to 90°. This, with abundance of moisture in the house, will insure large fruit, and if ventilation is given before nightfall and increased early in the morning all will be well; but if a close and moist atmosphere be maintained with high temperature the fruit, though large, will lack flavour. Keep the fruit with the apex to the light; laths across the trellis will admit of this being done, and clear away the leaves from the fruit, but do not remove them if it can be avoided. When approaching ripening cease syringing, admit air freely, and 60° to 65° at night will be a sufficiently high temperature or artificially in the daytime, unless it is wished to accelerate the ripening, when it should range from 70° to 75°, with a rise of 10° from sun heat.

Fruit Stoning.—Maintain a steady temperature of 60° to 65° at night, and 5° to 10° rise by day, with the usual advance of 5° to 10° or even 15° at closing time from sun heat. Avoid a close atmosphere, and maintain a uniform temperature and as equable a condition of moisture as practicable. Sudden fluctuations of temperature and cold draughts are pernicious, and equally disastrous is insufficient water at the roots. Allow a moderate extension of growth during this trying time, and do not permit a great per-centage of fruit to stone that must be removed afterwards, but remove it in good time. A superfluity of fruit at stoning prejudices the crop, and even if stoning takes place the fruit rarely finishes well, but falls off small and favourless, and a partial failure another year may be anticipated. Stop gross shoots, or remove them altogether, so as to maintain an equal diffusion of growth through each individual tree.

Late Houses.—Train the growths thinly, reserving a shoot at the base of the current bearing wood, and stop those on a level with or above the fruit at two or three leaves, and succeeding growths at a joint or two. Side shoots on extensions not required to form bearing shoots or for furnishing the trees stop at an inch or two of growth to form spurs, and by adding to the foliage will much encourage root action and benefit the fruit; besides, these spurs usually set fruit and swell it, when those on stronger growths do not. Thin the fruit to a few more than will be required for the crop, retaining the largest and best placed. There should not be more than one fruit to each square foot of trellis covered by the trees, but a few more may be left to meet casualties in stoning. Syringe twice daily except on dull days. During the prevalence of dull weather an occasional syringing will be all that is necessary, as it does not answer to keep moisture hanging on the foliage; indeed, the leaves should be dry or nearly so before dark. Water inside borders fortnightly, and afford liquid manure to weakly trees. Mulch the borders lightly with short manure, and keep it moist; mulching dry ground is very little use.

Melons.—*Fruit Ripening.*—Plants with the fruit ripening must have a plentiful supply of air, and water should be withheld from the fruit. If the plants are strong and there is a disposition to crack, in addition to withholding water from the Melons cut the growths carrying them half through a few inches below the fruit. A dry atmosphere is essential, and a temperature of 70° to 75° artificially, falling about 5° at night. If the sun be powerful place a slight shade of some kind directly over the fruit, as Melons ripening become heated, and do not mature nearly so regularly nor become so high in flavour as those that come on more gradually. Water need only be given to prevent flagging, and a slight shade from bright sun after a dull period is a much better way of preventing flagging than heavy waterings and a close vitiated atmosphere.

Fruit Swelling.—Add more soil to the ridges or hillocks. Let it be warm, moderately heavy, rather moist, and press it firmly. Give a thorough soaking of water when the fruit is the size of an egg, and follow in the course of a day or two with liquid manure, then mulch with horse droppings, exposed a few days in a shed, and turned over daily. Water will be required about twice a week, or only once in dull weather. In narrow borders the waterings will need to be more frequent; in large borders over fermenting materials it will not be required so often. Remove all fruit but three or four on a plant, also blossoms, and afford the needful support. Stop or remove laterals freely, not great reduction at a time, but little and often, not allowing secondary or tertiary growths to interfere with the principal. Syringe twice daily—in the afternoon not later than four o'clock, having the foliage fairly dry before night, and sprinkle the floor about five or six o'clock with weak liquid manure, and give a little ventilation at the top of the house when looking round the last thing at night. This will save some trouble if air is not given early in the morning. On bright mornings commence ventilating about seven o'clock, or at 75°, and increase it with the advancing sun, keeping through the day at 80° to 90° with bright sun, and 80° to 85° with alternating gleams. Close at 80° to 85°, increasing to 90°, 95°, or more. Fire heat will only be necessary on cold nights and in dull weather, for it is essential to guard against a sluggish circulation of the sap.

Plants Setting their Fruit.—The plants should have the foliage thin in disposal, so that air and light may have free access. The growths will then be stout and short jointed, and the foliage thick in texture. The blossom also will be proportionately strong. Ventilate a little constantly, and, if dull, have a little warmth in the pipes to cause a circulation of air, and when the heat falls below 65° at night or 70° to 75° in the daytime. The soil must be sufficiently moist to prevent the leaves flagging, and only moderate moisture will be required in the atmosphere, damping in the morning and again in the afternoon, but keep the water from the plants. To prevent the deposition of moisture on the flowers keep a warm buoyant atmosphere. Fertilise the blossoms about noon on fine days, and when several are expanded on a plant stop at one joint beyond the fruit to insure uniformity of swelling.

Young Plants.—Train with one shoot for trellises, and rub off the laterals up to the first wire, and then every alternate lateral on opposite sides afterwards, stopping the leading shoots when about two-thirds up the trellis. Flowers ought to show on the laterals; if they do not show at the second joint stop at that. Plants for training over the bed should be stopped at the second leaf. Select four of the resulting shoots, training two to the back and two to the front of the frame or pit. Remove all others carefully with the point of a knife, but if only two shoots result stop them at the second or third leaf, and make a selection of the best for training as before advised. Keep the stem clear of laterals and leaves for a space of about 6 inches from the collar. Remove every alternate lateral on the shoots, stopping these when 12 to 15 inches from the sides of the frame. Let there be no deficiency of moisture at the roots, and add fresh soil to the ridges or hillocks as the roots protrude. Syringe at closing time, but avoid wetting the foliage, as it may lead to canker, which should be kept under by rubbing quicklime into the affected parts until dry. Provide the necessary ventilation for insuring sturdy short-jointed growth. Put out plants as pits or frames become vacant, and if a gentle warmth at the roots be afforded it will give the plants a start and be all that is necessary. Close early, and keep the growth well regulated not less frequently than once a week. Shade only to prevent flagging; it will only be necessary for an hour or two at midday under powerful sun.

Sowing for Late Fruit.—A last sowing should be made at once for planting in manure-heated pits and frames. Plants from this sowing will afford fruit at the latter part of September, and be useful if properly attended to. Those with light, well-heated structures may continue making sowings as required until the end of July. The plants from the last-named sowing will continue the supply up to the beginning of November, after which the fruit is generally of very moderate quality.

GARDENERS' CHARITABLE AND PROVIDENT INSTITUTIONS.

THE GARDENERS' ROYAL BENEVOLENT INSTITUTION.—*Secretary*, Mr. G. J. Ingram, 50, Parliament Street, London, W.C.

UNITED HORTICULTURAL BENEFIT AND PROVIDENT SOCIETY.—*Secretary*, Mr. W. Collins, 9, Martindale Road, Balham, London, S.W.

ROYAL GARDENERS' ORPHAN FUND.—*Secretary*, Mr. A. F. Barron. Royal Horticultural Society's Gardens, Chiswick, London, W.

THE BEE-KEEPER.

APIARIAN NOTES.

My stock is just about the number I can manage at the moors. I am, therefore, by feeding keeping them in trim for any flow of honey that we may have; but unless the weather changes soon there will be no Heather on many of the hills in bloom in time, or before the autumn frosts. Under these circumstances all hopes of honey must be abandoned for this year. In that case I shall reduce my stock, and make an attempt to raise young queens for 1895. I depend mostly upon the Wild Thyme and Heather, so that I have ample time to triple my stock, and to have them all in first-class order by the end of July. By this means I reduce the expense of feeding one instead of three, while at the same time it is more consistent with Nature and the ways of the bees to let them swarm, and certainly is the most profitable.

OILCLOTHS.

The extremely wet season has roused bee-keepers to the necessity of having the sides of their hives protected with good waterproofs, while not a few persons have coveted mine. I have had several inquiries how to make these oilcloths, so may be excused repeating what has been said before.

To make oilcloths it is necessary to use genuine linseed oil. The "stickiness" complained of by some bee-keepers arises from using oil adulterated with palm and other cheap material. A gallon of oil is sufficient for 7 yards of heavy calico. Saturate the cloths (which have been previously washed) well with the oil, lay them in a tin or metal bath until the oil begins to set or feels sticky, turning them occasionally. Be careful not to neglect them too long or they may take fire spontaneously; in fact the rising of the temperature is a good indicator when the cloths should be hung up to dry. The secret of making good oilcloths is to have them fully saturated with oil the first coat, which cannot be well done with a brush. If too much oil is employed it will not set, but run off when the cloths are hung up; the proper quantity is known by there being just as much drippings as will give them a second coating, which may be put on with a brush, the hand, or a piece of cloth.

NAPHTHA.

This is a very useful thing to have in store. It takes grease and other stains out of cloth, and cleans the hands of all stains, oil or tar. It is so volatile that its offensive odour lasts only a few minutes, and does not injure any fabric. Care must be taken not to use it near a light or it might take fire, as it is very explosive.

As an insecticide I have not tried it much, but as it kills wasps I think it would be effectual in killing other vermin, and safer to use on plants than petroleum. Experiments in the above line are worth trying, and certainly as remover of grease or other stains from clothes or person naphtha is invaluable.—A LANARKSHIRE BEE-KEEPER.

PREMATURE KILLING OF DRONES.

WHAT can be the reason of bees killing mature drones before swarming? It is four weeks since I saw the first flight of drones in a hive, and the bees are now killing them. The hive is a round Stewarton, and consists of three stories. Previous to the 15th April it consisted only of two rooms. These being full of bees and comb I added another, so the three are now full of bees and comb. I notice the drones to be very numerous.—A BEGINNER.

[Perhaps "A Beginner" has not read the hints which has appeared lately in the *Journal of Horticulture* to feed to prevent brood-drawing and egg-eating. The cause of the bees killing mature drones is entirely due to the absence of honey, short stores, and the continued unpropitious weather. Feed liberally at once, and take the first opportunity to raise young queens to supersede all pregnant queens. They have been sorely taxed this season, and cannot be kept profitably for another year. We have had many years when it was necessary to feed the whole season—a hard task for working men. Many hives at the present time have stopped breeding, but only in cases where queens are of 1892. More youthful ones are still laying away in spite of the bad times, but the loss of adult bees are so great that hives are weaker now than they were the end of March. As the weather is there are no alternatives but to feed and introduce young queens.—A. L. B. K.]



*All correspondence should be directed either to "THE EDITOR" or to "THE PUBLISHER." Letters addressed to Dr. Hogg or members of the staff often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post, and we do not undertake to return rejected communications.

Gardenia florida (A. S. H. G.).—If the plant in a 7-inch pot, with a hundred flowers and buds, has also deep green foliage, we should say it has been very well grown.

Double Yellow Margaret (L. S.).—The double form to which you refer is not raised from seed but propagated from cuttings inserted in the autumn in cool frames, or the spring in gentle heat, and wintered in greenhouses. The plants are apt to suffer in a damp atmosphere.

Clay's Fertilizers (D. M.).—If these manures were not good they would not have been used so long by discriminating cultivators. The same day we received your inquiry we received Dr. Griffiths' analysis of two samples of Clay's bone meals. We give the first of them: moisture, 6.50; organic matter, 30.05; containing nitrogen (3.61), equal to ammonia (4.38); phosphate of lime, 51.91; carbonate of lime, 9.22; insoluble matter, 2.32. Dr. Griffiths says the samples consisted of bone only, and considerably exceed the percentages of phosphate of lime and ammonia which the Royal Agricultural Society recommend buyers to require.

Tea Roses for Standards—The Polyantha Stock (A. W.).—For a short selection of exhibition Tea Roses, which unusually do well as standards under favourable conditions, try Catherine Mermet, Comtesse de Nadaillac, Cleopatra, Ernest Metz, Ethel Brownlow, Jules Finger, Madame Cusin, Madame de Watteville, Madame Hoste, Maréchal Niel, Niphetos, Princess of Wales, Rubens, Souvenir de S. A. Prince, Madame Lambard, and The Bride. Seedling or cutting stocks of Polyantha simplex, now being tested by some growers as a stock for Teas, could be obtained in November from some of the leading nurserymen. Try Mr. Benjamin R. Cant, Colchester. We are obliged by your hint, which is duly noted.

Steamed Bone Flour (H. M.).—This is the result of grinding bones that have had the fat and a portion of the ossein melted out of them by being subjected to steam pressure and powerful heat in a close boiler. When the bones are thus dried they can be ground into finer particles than new bones can, and the action of the manure is quicker in consequence, notwithstanding that the finer and drier flour may contain a little less nitrogen. Perhaps your best plan will be to dissolve them by either of the following methods as may be most convenient:—1, Place 5 cwt. (or 12 bushels) of bone on an earthen floor, surrounded by a rim of ashes; pour on as much water as the bones will suck up, and then pour on 2 cwt. of sulphuric acid; it will boil somewhat violently for a while. When this has subsided it will get tolerably solid, and the ashes and all may be shovelled up together, and will be fit for use in a day or two. 2, Take a large watertight hogshead and cover the bottom with about 5 inches deep of dry soil; on this put a layer of bones of the same depth, and cover them entirely with wood ashes; on these another layer of bones, then ashes, and so on till the hogshead is full, placing a good thickness of ashes on the top. Leave it exposed to the rains all the summer and winter till spring. Then on removing the contents of the hogshead the bones will crumble to powder under a slight pressure, and form one of the most valuable manures ready for immediate use.

Packing Grapes and Flowers (Amateur).—We have found tin boxes excellent for sending both fruit and flowers by post, separately, the boxes in each case to be firmly filled, so that the contents are immovable. Flowers should be cut young, either at night, and placed in water, or early in the morning before the petals become flaccid. The box may be slightly damped, and the heaviest flowers should be placed at the bottom, the lighter above them. These may be covered with Ferns previously dipped in water, then shaken out, or other soft greenery, and pressed firmly down with the lid. For Grapes the boxes must be dry. A layer of springy moss may be placed at the bottom, this to be covered with tissue paper, which must also reach up the sides and well above the top. The boxes should be a little slanted when filled, one end resting on a table, the other held up, and each bunch

placed point downward, and affixed in position so that the stalk reaches a little above the top. Judgment should be exercised in placing the bunches in the right position at the first, not shifting them in and out, and when all are in they should wedge each other. To render them still more rigid a little wadding may, if necessary, be forced down here and there between the paper and the box, the paper then drawn over and the lid placed on, gently pressing down the stems. We have tried all sorts of packing for surrounding the berries, but find that good Grapes, rightly placed in the boxes, come out of them in better condition when they simply press against each other. Thin-skinned loose bunches of ill-grown Grapes cannot by any method of packing be sent through the post to reach their destination in a satisfactory state. You would read the leading article on "Preparing and Packing Flowers," published in the *Journal of Horticulture* last week.

Culture of Epacris (Amateur).—For soil good fibry peat must be provided, and sharp silver sand mixed with it to keep it open. Efficient drainage, efficient watering, and firm potting are also necessary. When once plants which are firmly potted in peat become dry ordinary waterings are not sufficient to moisten the soil thoroughly. They must be watered again and again until the water pours from the hole in the bottom of the pot. Indeed if the dryness is allowed to go too far there is nothing for it but steeping the pot in the cistern until the air balls, which are displaced by the water, cease bubbling up. After the ball is thoroughly soaked no more water should be applied until necessary, when a thorough supply should be given. This is one of the secrets in successful Epacris growing. Another, as we have said, is firm potting. Another consists in growing them in an airy greenhouse, where as little fire heat as possible is used, and where a constant circulation of air is kept up on all favourable occasions. After the flowers have faded the growth should be cut back. Erect kinds should be cut back close to the old wood, and drooping kinds scarcely so far back. After they are cut back they should be kept rather close until they begin to grow again, when, if necessary, they should be potted into larger pots. After they have fairly recovered from cutting back and potting they should be plunged in ashes out of doors for the summer. By the end of September they should again be housed. They are rather difficult to raise with ordinary appliances, and raising plants from cuttings is hardly worth an amateur's trouble, for your flowering plants may be purchased very cheaply. The amateur should purchase his plants when in bloom, so as to suit his taste, or a nurseryman will generally advise him as to the best kinds to buy. We, however, name a dozen good varieties. *E. Butterfly*, *E. campanulata* and *campanulata alba*, *E. Fireball*, *E. hyacinthiflora fulgens*, *E. Ingrami*, *E. impressa*, *E. Lady Panmure*, *E. Lowi*, *E. miniata splendens*, *E. odorata alba*, *E. Sunset*, *E. Vesta*.

Muscat Grapes Scalded (X. Y. Z.).—You say you have thinned the leaves of the Vines, and ask if you have done this too much. We think it very probable, and we are very sorry to see such fine berries ruined, as those you have sent. It is possible also that the night temperature of the house has been too low during the late cold weather, causing much condensation of moisture on the berries, and it is further possible that the morning ventilation was not increased soon enough, and gradually with the increasing temperature. However, be this as it may, those conditions lead directly to scalding. Reverting to "thinning the leaves," if these are large leaves it is a practice that cannot be too strongly condemned. Such drastic work should never be required. The laterals should be so thinly disposed that every main leaf up to and for one or two beyond the bunch can develop under the direct action of light, not those on one lateral crushing and overgrowing those on the other. Then will the foliage feed the fruit, and give strength to the Vines. The proper disposition of laterals and leaves is easily effected by disbudding and removing superfluous growths when quite young, and before the leaves have expanded. Permitting Vines to grow into a thicket, then taking off a number of large leaves at a critical time, is courting disaster, and it will be the more complete on a sudden change from dull weather to one or two brilliant days. Maintain a night temperature of 65°, with a chink of air at the top of the house; at 70° admit a little more, but not to lower the temperature, and so continue with each rise of 5° till the day sun maximum of 85° is reached, all the readings to be taken from a shaded thermometer. On very bright days spread a net on the roof, or sprinkle with limewash through a syringe.

Names of Plants.—We only undertake to name species of plants, not varieties that have originated from seed and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in firm boxes. Slightly damp moss, soft green grass or leaves form the best packing, dry wool the worst. Not more than six specimens can be named at once, and the numbers should be visible without untying the ligatures, it being often difficult to separate them when the paper is damp. (*H. P.*)—*Streptosolen Jamesoni*. (*Amateur*).—1, *Crassula coccinea*; 2, *Carpenteria californica*. (*G. P.*)—*Justicia carnea*. (*X. Y. Z.*)—1, *Spiraea Douglasi*; 2, *S. Aruncus*. (*P. R.*)—We do not name varieties of Roses, they are florists' flowers; see notice above. (*E. D.*)—*Gcum coccineum*. (*Constant Reader*).—Fern *Davallia canariense*; flower, *Zephyranthes carinata*. (*J. C.*)—1, *Erica codonodes*; 2, *Berberis vulgaris*; 3, *Pyrus domestica*, the Service Tree. (*Box*).—We have received some flowers for naming, but no name or letter accompanied the box. The names are as follows—1, *Buddleia globosa* (Orange Ball tree); 2, *Clarkia elegans*; 3, *Centaurea Cyanus* (the Cornflower); 4, *Geranium sanguineum*; 5, *Lychnis chalcedonica*; 6, *Centaurea*

montana. (*J. W. Keswick*).—1, *Cerasus serotina*; 2, *Ledum palustre*; 3, *Sedum azoideum variegatum*; 4, *Begonia Jules Chretien*; 5, *Adiantum farleyense*; 6, *A. cuneatum*. (*H. M. H.*)—1, *Veronica rupestris*; 2, *Vicia Cracca fl. alba*.

COVENT GARDEN MARKET.—JUNE 20TH

SUPPLIES of outdoor fruit reaching us in larger quantities. Heavy supplies of hothouse fruit meeting with a flat demand.

FRUIT.							
	s.	d.	s.		s.	d.	s.
Apples, Tasmanian, per case	8	0	to 12	0	Peaches, per doz.	2	0 to 3
Grapes, per lb.	1	0	3	0	St. Michael Pines, each	2	0 6
Lemons, case	10	0	15	0	Strawberries per lb.	0	6 1
VEGETABLES.							
	s.	d.	s.		s.	d.	s.
Asparagus, per bundle	1	6	to 3	6	Mushrooms, punnet	0	9 to 1
Beans, Kidney, per lb.	0	6	0	9	Mustard and Cress, punnet	0	2 0
Beet, Red, dozen	1	0	0	0	Onions, bushel	3	6 4
Carrots, bunch	0	3	0	4	Parsley, dozen bunches	2	0 3
" new, bunch	0	9	1	0	Parsnips, dozen	1	0 0
Cauliflowers, dozen	1	6	3	0	Potatoes, per cwt.	2	0 4
Celery, bundle	1	0	1	3	Salsafy, bundle	1	0 1
Coleworts, dozen bunches	2	0	4	0	Scorzonera, bundle	1	6 0
Cucumbers, dozen	1	6	3	0	Shallots, per lb.	0	3 0
Endive, dozen	1	3	1	6	Spinach, bushel	1	6 3
Herbs, bunch	0	3	0	0	Tomatoes, per lb.	0	4 0
Leeks, bunch	0	2	0	0	Turnips, bunch	0	3 0
Lettuce, dozen	0	9	1	0	" new, bunch	0	8 0

AVERAGE WHOLESALE PRICES.—OUT FLOWERS.

Orchid Blooms in variety.							
	s.	d.	s.		s.	d.	s.
Arm Lilies, 12 blooms	1	6	to 3	0	Peonies, dozen bunches	10	0 to 15
Bouvardias, bunch	0	6	1	0	Pansies, dozen bunches	1	0 2
Carnations, 12 blooms	0	9	1	6	Pelargoniums, 12 bunches	6	0 9
Cornflowers, doz. bunches	1	0	2	0	Pelargoniums, scarlet, doz.	3	0 6
Encharis, dozen	2	0	4	0	" bunches	1	6 3
Gardenias, per dozen	1	0	4	0	Pinks, various, doz. bunches	1	6 3
Iris, dozen blooms	0	6	1	6	Poppies, various, dozen	1	0 3
Lilac (French) per bunch	2	6	4	0	" bunches	1	0 3
Lily of Valley, doz. sprays	1	0	1	6	Primula (double), dozen	0	6 1
Lilium candidum, dozen	12	0	13	0	" sprays	3	0 6
Lilium candidum, dozen	0	6	0	9	Pyrethrum, dozen bunches	2	0 4
Lilium longiflorum, per doz.	2	0	4	0	Ranunculus, doz. bunches	0	6 1
Maidenhair Fern, dozen	4	0	6	0	Roses (indoor), dozen	4	0 8
Marguerites, 12 bunches	1	6	4	0	" (outdoor), doz. bunches	1	0 3
Moss Roses (French), doz.	4	0	9	0	" Tea, white, dozen	2	0 4
bunches	4	0	9	0	" Yellow, dozen	0	6 1
Myosotis or Forget-me-nots, dozen bunches	1	6	2	0	Roses (French), per dozen	1	0 2
Mignonette, 12 bunches	3	0	6	0	Roses, Safrano (English),	1	0 2
Narciss, various, doz. bunches	3	0	6	0	per dozen	1	6 5
Orchids, per dozen blooms	1	0	9	0	Roses, Maréchal Niel, per	1	6 5

PLANTS IN POTS.

	s.	d.	s.		s.	d.	s.
Arbor Vitæ (golden) dozen	6	0	to 12	0	Hydrangea, per dozen	9	0 to 18
Aram Lilies, per dozen	6	0	12	0	Ivy Geraniums	5	0 8
Aspidistra, per dozen	18	0	36	0	Lilium Harrisii, per dozen	15	0 30
Aspidistra, specimen plant	5	0	10	6	Lobelia, per dozen	4	0 6
Calceolarias, dozen pots	4	0	8	0	Lycopodiums, per dozen	3	0 4
Cineraria, per dozen	4	0	6	0	Marguerite Daisy, dozen	6	0 12
Draena terminalis, per					" yellow, doz. pots	6	0 18
dozen	18	0	42	0	Mignonette, per doz.	4	0 8
Draena viridis, dozen	9	0	24	0	Musk, per dozen	3	0 6
Ericas, per dozen	9	0	24	0	Myrtles, dozen	6	0 9
Enonymus, var., dozen	6	0	18	0	Nasturtiums, per dozen	1	6 6
Evergreens, in var., dozen	6	0	24	0	Palms, in var., each	1	0 15
Ferns, in variety, dozen	4	0	12	0	" (specimens)	21	0 63
" (small), per hundred	4	0	8	0	Pelargoniums, per dozen	6	0 15
Ficus elastica, each	1	0	7	6	" scarlet, per doz.	3	0 6
Foliage plants, var., each	2	0	10	0	Roses, various, per dozen	12	0 36
Fuchsia, per dozen	6	0	9	0	" (Fairy), per dozen	6	0 9
Heliotrope, per dozen	5	0	8	0	Spiræas, per dozen	6	0 12
					Stocks, per dozen	3	6 5

Roots in variety for planting out, in boxes or by the dozen.



PLANT FOOD.

LONG have we held that nitrate of soda is the king of manures, the golden key which unlocks the treasures of the soil; the missing link without which the action of other manures is comparatively feeble and unprofitable; the finest stimulant for plant growth when in full activity; the best form of nitrogenous manure to use in combination with potash salts and phosphoric acid as a complete plant food—a mixture of all the essential elements of fertility require in soil for full crop development.

On the first Monday in June Sir Henry Gilbert gave proof at Rothamsted to Colonel North and a large party of gentlemen interested in the nitrate trade, that nitrate of soda stands supreme among manures for all crops excepting Potatoes. For fifty years have Sir Henry Gilbert and Sir John Bennet Lawes conducted manurial trials there, and their deductions are accepted as being entirely reliable and beyond question. Here are a few of those which Sir Henry explained. Turnips fed by mineral manures only gave a crop of about 8 tons per acre. By the addition of nitrate of soda to the minerals the yield per acre was raised to from 20 to 25 tons, about 60 per cent. of the nitrogen being utilised by the Turnip crop. On the Mangold and Turnip plots in which the fifty-second consecutive crops are now growing, Turnips having a full dressing of minerals and sulphate of ammonia, have given an average crop slightly under 15 tons for the last seventeen years; and the plots having their nitrogen, as nitrate of soda, have during the same period had an average yield of 2 tons 13 cwt. more. The feeding value is also distinctly in favour of the nitrate of soda, 1 lb. of it added to the minerals producing in Mangolds 28.8 lbs. of sugar, as compared with 19.3 lbs. of sugar obtained by the use of 1 lb. of sulphate of ammonia in similar combination. Particular attention was called to the necessity for the exercise of caution in the use of Mangolds so fed. The roots are so surcharged with saline matter that they ripen slowly, and if used early and freely in winter they often induce scour, which is sometimes so excessive and persistent as to prove fatal. Though the reason for caution in the use of Mangolds may not be generally understood, the necessity for it certainly is, so that there is little if any risk of harm from premature use.

Very valuable lessons, too, were afforded by the grass plots where the experiments have been in progress for about forty years. The most useful are that not more than 1½ cwt. per acre should be used, and even this amount may often be reduced to 1 cwt. with advantage. Other lessons are that nitrate used alone causes a thick growth with very little seed development. That such growth has little Clover in it, and that an addition of potash brings Clover. That a full dressing of nitrate, with a proper mixture of minerals and potash gives a very heavy and early growth. That superphosphate of lime alone does very little good, and is not recommended.

It may be thought that there is nothing particularly new about these hints, nor is there. But they are received with the attention and respect which they so clearly merit, and in the application of their teaching we say do not place undue stress upon the use of any one manure for pasture. For example, we strongly question the wisdom of heavy dressing of bones or basic slag. It is certain that though by such means we may store the soil with phosphates, yet these are not a complete plant food, and we never can obtain a full crop of grass, cereals or roots, without first storing in the soil the indispensable elements of nitrogen and potash in combination with phosphates. It is undoubtedly true that we may usefully apply phosphates as a foundation in the autumn; but we fail to see the value of any such application alone at that season of the year. Under the light of experience we are bound to insist upon the annual use of complete plant food on pasture about the end of February, the manures then to consist per acre of 1 cwt. nitrate of soda, 1½ cwt. mineral superphosphate, ¼ cwt. muriate of potash, ¼ cwt. steamed bone flour. For this very moderate dressing to be really effective the manures must be pure. For very poor or neglected pasture we would have the same amount of superphosphate with 1½ cwt. nitrate, ½ cwt. bone flour, and ½ cwt. muriate of potash the first season, using the lesser quantities subsequently. Timely and persistent use of pure manures is the most important point of all, and the most difficult. "What! am I to go on using this manure every year?" was the exclamation we heard this spring. Certainly,

we replied, and you will be well repaid for doing so; in nothing is perseverance better rewarded than in the judicious use of such manures.

WORK ON THE HOME FARM.

As lambs are weaned withdraw from the flock all ewes that are over-aged or unfit for breeding again. Be particular in this matter, and never retain a doubtful animal in the ewe flock. To have strong healthy lambs we must have sound ewes in perfect health without ailments of any sort. This is one of the reasons why we so persistently insist upon keeping down foot rot, and call attention to the fact that kneelers in any flock are a sure sign of negligence on the part of the shepherd. The foot or feet affected by this troublesome disease are so sore and tender that the sheep kneel while grazing to obtain some relief in their agony. Not only do we insist upon prompt attention, but tender treatment in every case. To this end see that the operator has a suitable knife with a small and very sharp blade. The ordinary shepherd's knife with its long straight blade is more suitable for killing a sheep than for paring its hoofs. That, combined with clumsiness and brutality, is why we so often see the wounds on the feet bleeding under treatment. The best plan is to place all lame sheep in a small paddock or other suitable enclosure near the homestead, so as to have them under frequent observation and for daily treatment. Speedy recovery is then as certain as desirable. Apart from the sufferings of the sheep, they never can thrive with foot rot.

Soon after, and never before the weaning, the whole of the sheep and lambs are dipped in Cooper's solution, to destroy ticks and other parasites, and for a while to keep off fly attacks. They are then free for the summer months from the irritation caused by insects in the wool. The reason for not dipping before the weaning is the risk of the lambs being poisoned by the dip dressing on the ewes' udders. Though the weather has been dull and damp there has been some trouble from flies, especially on sheep suffering from scour. Close daily inspection is the only safe plan. The sheep need not be handled, a quiet walk among the flock enabling one to see if there are any cases requiring attention. The irritation from fly maggots causes the sheep to be restless, not perhaps so much as to run about, but certainly by frequent twitching and rubbing. A prompt use of Cuff's dressing clears out all the maggots and at once affords relief.

OUR LETTER BOX.

Poor Pasture (G. I.).—Our farm article this week, and the answer to "J. C. B." contains the information you require. The manures may be used on any kind of soil with satisfactory results. Note our recommendation of an annual dressing, which invariably proves so profitable that the expense is true economy and a sound investment. Also see that you obtain pure manures, then by timely use success is as certain as failure if you use impure or adulterated manure.

Chemical Manures (J. C. B.).—See our farm article this week for quantities and the time to apply them. For your poor sandy loam use the larger quantity next season, and the lesser quantity subsequently year by year. Remember that in order to have rich pasture soil fertility must be fully sustained. This is only to be done well by regular annual dressings of manure. With this see also that you have pure manures from a reliable source, and that they are applied quite by the last week in February, then you are certain to have abundant rich nutritious herbage, and to be well repaid for your outlay upon the manures.

METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude, 111 feet

DATE.		9 A.M.					IN THE DAY.				Rain.
		Barometer at 32° and Sea Level.	Hygrometer.		Direc- tion of Wind.	Temp. of soil at 1 foot.	Shade Tem- perature.		Radiation Temperature		
			Dry.	Wet.			Max.	Min.	In Sun.	On Grass.	
1894. June.											
		Inchs.	deg.	deg.		deg.	deg.	deg.	deg.	Inchs.	
Sunday ..	10	29.902	57.6	54.2	W.S.W.	54.3	63.6	51.9	83.0	47.2	0.090
Monday ..	11	29.755	54.8	48.4	W.	53.9	62.3	45.9	114.9	40.8	0.143
Tuesday ..	12	29.897	54.3	50.2	N.	53.3	64.1	43.7	103.0	38.8	0.051
Wednesday	13	29.958	55.6	55.2	N.	53.6	59.7	47.8	89.7	42.2	—
Thursday ..	14	30.147	59.3	54.8	N.	53.2	73.1	45.1	116.6	36.6	—
Friday ..	15	30.131	62.7	57.1	W.	55.5	72.0	51.0	113.8	48.0	0.162
Saturday ..	16	30.143	61.9	54.2	N.	56.8	70.8	52.1	119.7	48.2	—
		29.991	58.0	53.4		54.4	66.5	48.2	105.8	43.1	0.447

REMARKS.

10th.—Overcast almost throughout, with occasional spots of rain and heavy rain from 4.30 P.M. to 5 P.M.
 11th.—Windy, with alternate sunshine, cloud, and showers, the latter preponderating in the afternoon.
 12th.—Occasional sunshine, but generally overcast, and frequently dark and threatening; slight showers in evening.
 13th.—Showers in the small hours; gleams of sun early; overcast almost throughout the day.
 14th.—Sunny almost throughout.
 15th.—Fine and pleasant, but not much bright sunshine. Cloudy evening and rain from 10.45 P.M. to midnight.
 16th.—Bright sunshine almost throughout. Solar halo at 5 P.M.
 Not so damp as the previous week, but like several previous weeks, cooler and damper than usual. Nearly 10° colder than the corresponding week of last year, and the maximum in shade only 73.1°, against 88.8°, or nearly 16° less.—G. J. SYMONS.



ALMOST ere we know it June is nearly past, and the flowers of summer have attained the zenith of their beauty. The rosarians are having, and will have, the full enjoyment of the queenly Rose, whose charms are well known; but if some lovers of hardy garden flowers have to content themselves with a few Roses they have compensation in the brightness of the garden yielded by other flowers. The Dianthus, the "divine" flower, is in full beauty, ranging from the tiny alpine forms and "Maiden" Pinks to the odorous garden Pinks. The Lily, "Lady of the flowering field," as Spenser calls it, has come to delight us with its waxen petals. The Pyrethrum, too, which tells us once again how much has been done for our gardens by the florist, yields us its beautiful Aster-like flowers. The Delphiniums, with their tall spikes of blue, inspire us with feelings of admiration, and a host of other flowers of a lesser or of greater worth present themselves. To speak now of even a tithe of these would transgress one's limits, and I am thus, perforce, compelled to cull from the riches of the month a few flowers, which are for various reasons likely to be worthy of particular mention.

In the profusion of Irises of some notice is *I. tectorum* or *tomiolepha*, now in flower on the top of one of my rockeries. Very pretty it is, and distinct from most others of its size by reason of the crest which adorns its flowers. These are bright lilac, with a deeply cut lilac and white crest, and, like most other Irises, so beautifully marked and coloured that it is impossible to describe them perfectly. These flowers remind one from their flattish form of those of the splendid *Iris Kämpferi*. *I. tectorum* is not often seen, and I fancy many persons who would like to grow it are deterred by the statement in some of the catalogues that it grows on the roofs of Chinese and Japanese houses, where it has a good roasting in summer. This led me to decline buying it for some years, although it was passed by with regret. More than two years ago I purchased a small plant, and planted it in light sandy peat on the top of one of my rockeries which faces almost full south, and is protected from the north by a wall. No special protection was afforded it, and this year it came beautifully into flower at the end of May. The only injury it received since planted was in one of its stems being broken off at the base by a severe gale, the severity of the two last winters having caused no damage to it. I am quite satisfied of its hardiness in my own garden, and to test its powers of endurance have planted a small piece on the roof of a low outhouse, which I have been converting into a "roof garden" for *Sempervivums* and other succulent plants. Here I hope this "Roof Iris" may succeed, my only fear being that the winds in this exposed position may break the plant at the rhizomes. *I. tectorum* is about 1½ foot high, and appears to increase rapidly. It is said to have been introduced from China and Japan in 1872 or 1874, and to be figured in the "Botanical Magazine" t. 6118. Most authorities, including Mr. Baker, consider *I. tectorum* synonymous with *I. tomiolepha*, but Dr. Wallace of Colchester seems to say these two are not the same. I observe the two quoted separately in a continental catalogue recently received. Should this meet the eye of Dr. Wallace I hope he will kindly tell us the difference between *I. tectorum* and *I. tomiolepha*.

The Poppies, or some of them at least, are favourites of mine,

and few flowers are more effective in June than the great orange-scarlet blossoms of *Papaver orientale*, the Eastern Poppy. Not nearly so fine, but still attractive in its way, is *P. pilosum*, with orange flowers, which are flat and of comparatively poor form. The plant is, however, of good habit, growing about 2 feet in height, and the stems being many-flowered the blooms are produced for a long time in succession. The specific name is derived from the stems and leaves being covered with long, soft hairs. The flowers are rather fleeting, and it is to be hoped that raising seedlings may give us flowers of better form, and not so fugacious in their beauty. *P. pilosum* is a true perennial, and comes from Bithynia.

The Round-leaved Rest Harrow (*Ononis rotundifolia*) is not often seen in gardens, but is very pleasing with its neat habit and pea-shaped rose flowers. The leaves are in reality trifoliate, but the leaflets are roundish, and are of a pretty fresh green colour. *O. rotundifolia* grows from 12 to 18 inches high, the latter being the height it attains in the sandy peat of my garden near the front of a border. Whatever may be the cause, it is not a long liver in some gardens, and in such it may be well to preserve it by raising seedlings. These are particular favourites of slugs, which will soon destroy the young plants if not protected. A figure of this Rest Harrow will be found in the "Botanical Magazine," t. 335. Maund also figures it in "The Botanic Garden," plate liv. of vol. ii. of the edition of 1878, but as only a small portion of the plant is shown its neat, bushy habit is not apparent. The date of introduction of *O. rotundifolia* is given as 1570, and its habitats are variously given as S. Europe and Switzerland. *O. rotundifolia* appears to have received a botanical certificate at the show of the Royal Botanical Society on May 30th last year.

Looking at *Primula sikkimensis* as growing in my garden I am constrained to ask if much of the failure to succeed with this beautiful species is not due to endeavouring to imitate its natural conditions in its native habitat, and keeping it too wet especially in the winter. It is quite a success with me, and is sowing itself and coming up at the edge of one of the gravel paths, and one seedling which made its appearance last year on one of the terraces of a rather dry part of the rockery is now growing strongly. I have a plant growing in a low position at the base of a rockery and below the level of the path, so that it receives all the superfluous water it can possibly obtain. Not only is this the case, but it receives regular waterings and occasional floodings. Another plant in a much drier position was planted at the same time four or five years ago. This only receives waterings in summer, and if forgotten I have seen the leaves hanging limp and the flower stems almost prostrate. The latter plant, however, grows and flowers much more freely, coming into bloom considerably earlier also. It has, as I write, some twenty-two flower spikes in full bloom, and presenting a beautiful sight; while the other has only six. Seedlings from the latter, but growing in the edge of the path, are also more vigorous than their parent. I hope it may not be supposed that I am stating that rather a dry position would be the best for all gardens. There are few plants of which it can be said that only one treatment will succeed in every garden. To hold this is empiricism and not gardening, and one can only give their experience in the hope that others may be enabled to profit by it. I hope to increase this Sikkim Cowslip largely by seed and division, as it is not difficult to conceive how beautiful would be a hundred or more spikes of these pretty soft yellow drooping flowers. Last winter I purposely left the upper portion of the roots of my largest plant fully exposed to the weather, and no harm has resulted.

It is one of the duties of persons writing in the *Journal of Horticulture* to tell not only of meritorious plants, but also to speak of those which cannot be recommended to the admirer of flowers. In many cases it may be want of hardiness which leads one to disparage a plant. In some, however, lack of beauty is the cause. The mention of the beautiful Sikkim Cowslip leads me to

speak briefly of an allied species from Central Asia, but which is worthless or nearly so from a gardening point of view. This is *Primula grandis*, and why this specific name was given one can hardly imagine, unless it may have been so called on account of its stature. Last year I received it from a friend with the observation that it was not a showy plant. The leaves are large, and the flowers, which are in an umbel, are suspended from long pedicels. The flowers are exceedingly small and of no effect, the dull yellow petals not opening to any extent, but remaining in a semi-tubular form. They are extremely inconspicuous. An authority gives the height as 9 inches, but this is clearly a mistake. In my garden in a dry position it attains a height of 2½ feet, but in that of my esteemed correspondent it grows no less than 3 feet high. *P. grandis* was introduced from Central Asia in 1878.

I cannot close these notes without referring to a plant of great beauty which, in view of the increased attention likely to be given to hardy flowering shrubs this year, may not inappropriately be mentioned here. This is *Olearia Gunniana*, known also as *Eurybia Gunniana*, a Tasmanian shrub which is admirably adapted for the rockery or some select and sheltered situation. The popular name of "Gunn's Daisy Bush" is much more applicable than many such names, as it resembles nothing so much as a small bush smothered with little white Daisies hardly three-quarters of an inch in diameter. The toothed and rather lanceolate leaves and the branches are greyish in appearance, and even when out of flower the "Daisy Bush" is very attractive. It is said to grow from 3 to 5 feet in height, but even small plants will flower freely, and it can be kept dwarfer by being clipped or pruned. It is generally considered to require some protection in winter, but here on rockeries with both south and east exposures, but partly sheltered from cold winds, this *Olearia* has proved quite hardy. It is easily propagated by means of cuttings. One can only hope that the increased rapidity of communication with the Antipodes will lead to the introduction of many such charming plants, which please us by their beauty, and link us with our kindred beyond the seas.—S. ARNOTT, *Dumfries*.

THE NUTRITION OF ROOTS.

"NAILLEM" (page 489) may call himself anything he likes, and I am sure I shall not mind; but I do wish that he and Mr. Gilmour, in commenting on a letter or series of letters, would see what those letters contain and what they do not. The whole gist of my communication is misunderstood by "Naillem." Nay, he knows more about what I meant than I do, for he says "the real question is" something different. All I wanted to know was whether it is doubted by a majority of practical and scientific men that the rising moisture does bring up plant food. That it is doubted by some I know. I did not wish to institute any comparison of value between deeply buried and surface manuring, but merely to obtain some authority for the fact that buried manure, not penetrated by roots, yet feeds those roots by the rising moisture. It is a point on which there may be some difference of opinion, and I wished to bring it out. May I say now that the well known authority "Naillem" is in favour of the statement, and sets his valuable seal upon it?

I do not wonder that he is "inclined to doubt" that manure is buried 4 feet deep under Dutch bulbs in Holland, and if he will look again he will see that I never ventured to suggest it was.

It seems to me that the value of rising moisture to plant life should be evident to every cultivator of the soil during the late weather. We have had occasional promises of a sunny day, and on each of them have thought "now is the time to hoe that piece of ground where the weeds are beginning to grow so fast." We have done it, and have been pleased at the end of the day; but have felt next morning when we woke to pouring rain that our labour and time have been almost thrown away. The surface-rooting weeds have not died, and will soon be strong again.

Nevertheless, "Naillem" and "Raillem," and all other gardeners like the good fellows that we are, have gone to work again with the next gleam of sunshine and dry air, and without a grumble have done the job all over again. By simply passing the hoe under the previously hoed weeds, and severing no freshly formed roots, we cause them to perish under the influence of the sun. They die of drought, whereas had the hoe not gone under them, below such

roots as were left and between them and the lower soil, they would have retained life and recovered. What is the reason of this? Because, I take it, the rain falling on the newly hoed weeds not only refreshed them as it fell but also re-established their communication with the rising moisture, which the second passing of the hoe underneath them once more cut off. Is not this so?—W. R. RAILLEM.

FLOWERS IN COVENT GARDEN.

WHEN asked to read a paper on market flowers, I felt that it was a subject so likely to interest the members of our Horticultural Club, that it was impossible for me to decline to accede to the request. The after-dinner discussion and friendly chat on such an occasion is a connecting link between the horticultural scientist of learned leisure and his more mercantile brothers of large nursery and seed trade and the wholesale market trade. For after all, what are the advantages of botanical scientific pursuits, the improvement of fruits and flowers, and the introduction of new varieties, if such advantages are confined to the few, and not appreciated and shared by the many? It is only through such a channel as a public market offers that the genuine stamp of popular approval can be obtained, and the business and commercial value of any fresh articles introduced for public supply can be truly tested. One thing is certain, and that is that there is no advertisement in the world so powerful for a really good article as its exhibition on a grower's stand side by side with its rivals.

In adding my mite to the discussions of the Club, it will be a novelty for you to have a paper on flowers from one who does not possess 1 inch of ground on which to grow them, and even if he had, they could hardly be expected to succeed where nothing but hardy Palms or *Aspidistra* long survive. My misfortune in this respect has not diminished my old love for them, but, on the contrary, perhaps made me more keenly observant as to how we poor non-growing public are supplied.

In the first place, I would observe that there will be nothing new in my remarks—nothing but what each and every member can easily see and learn for himself; hardly anything but what has appeared from time to time in the gardening and other public press.

I have been often interviewed by public writers for information respecting market matters, and I have not only given them every information correctly myself, but have referred them to growers and others who could, and probably would, furnish them with particulars and details beyond my own knowledge and observation. Such articles upon market flowers as those of Mr. Gordon, which have recently appeared in the "Leisure Hour," are the outcome of such inquiries, supplemented by visits to the market during business hours, and to the establishments of our leading producers. Perhaps I may be pardoned if I turn back and give a brief review of the history and growth of the market before speaking of its present flower supply.

It may be interesting to know that in 1828, when the present regulating Act of Parliament under which the market is managed was passed, the area of the chartered market was divided into eight different sections for various purposes. These were named after the first eight letters of the alphabet, and varied much in size. Section H, the smallest and last, was the portion assigned for flowers; it contained twelve small stands, about equal to one-hundredth of the market area, and had no provision for shelves or other method of exhibiting the goods except the floor space, which was uncovered. Such was considered sufficient provision for the wants of that time, and continued so for many years.

The growth of the public taste for flowers is a most marked illustration of the advance of the age in which we live. Doubtless many causes have worked together contributing towards it, such as—

1. The increase in the wealth of the manufacturing and trading classes, enabling them to acquire and indulge in more refined taste.
2. The increase of London, by the retirement of its more prosperous citizens into suburban residences, with gardens and conservatories attached.
3. The public Exhibitions and the Shows of the Royal Horticultural Society doubtless stimulated and directed public taste.
4. The spread of education amongst the working classes had a decided tendency to create amongst them a taste for the beautiful.
5. The migration into London of country folk, who regarded a window plant as a connecting link between the new life in town and the green fields of happy memory left behind.
6. And lastly, the fashion of the times, which led people to beautify and adorn their tables and rooms with floral decorations; and also to express affection and regard for the living, and esteem and respect for the dead by floral offerings. Even the revival of ritualistic ceremony in

religious worship has had its share in contributing to a general demand for flowers.

And how has this gradually increasing trade been provided for? In 1848 it was found that the flower-stands, section H, was totally inadequate for the then trade. It had already begun to be patent to a few pioneer growers that a public want required to be met, and a rapid increase developed itself. No longer was it possible for the church porch and the piazzas round the market square to give shelter to the improving and increasing supply of plants.

Then arose the question of a flower market pure and simple. It happened that the leases of certain houses at the south-east corner of the market fell in at this time, and after an experiment the first flower market was built.

This increased facility for the trade soon had the effect of still further stimulating the public demand. As plants and flowers became better grown and better known, they became better appreciated, and the market gave still further signs of want of space. In fact, it was like a growing youth whose limbs had outgrown his clothes. Like a good father, His Grace resolved to buy the lad a new suit, and in 1886 the present market was completed. I may say the young man still continues to grow, and additional provision for his pressing wants will have some day to be made. At present, a portion of the overflow market, consisting of bedding-out plants for gardens and window boxes, finds accommodation in the enclosed area between Tavistock Street and the market south side.—J. ASSBEE, *Covent Garden*.

(To be continued.)



A BLACK CHRYSANTHEMUM.

LAST year the eminent American Chrysanthemum specialist Mr T. H. Spaulding announced the distribution of a variety called Black Gem, but it does not seem to have found its way yet into European collections, although most of our leading importers are in the habit of dealing with him. Black Gem is described as a rare variety imported from Japan. Colour almost black when opening; when expanded it is of the deepest crimson. This year the same grower offers for sale a variety named Spaulding's Black Diamond. It is stated to be the very best crimson (almost black) variety in cultivation for decorative purposes, rich, dark, self-coloured flower without shadings of any other colour. It would be interesting to know if these are really darker than some of the deep crimsons in cultivation over here.

AMERICAN AND ENGLISH CHRYSANTHEMUMS.

Mr. J. N. May, in a discourse delivered at the opening of the Chrysanthemum Show at New York last November, laid stress on the fact that American florists were sending out finer varieties of Chrysanthemums than the florists of the older countries had ever raised. There are, undoubtedly, many excellent flowers in our collections that have come from the States, but we shall now be more interested in watching the progress of the 1894 varieties than before. The interesting election which appeared in the *Journal* of 25th January, taken in conjunction with Mr. Mawley's analysis, scarcely warrants Mr. May's assumption. In the list for twenty-four Japanese, out of those flowers which obtained ten or more votes—and there are thirty-two—eleven only are introductions from America. With the exception of Col. W. B. Smith, none of the American varieties obtain thirty votes, or stated otherwise out of the best twelve there is only one variety of American origin. Going further down the list, and taking the twenty-five that received the highest number of votes, it will be found that only six of these are American, six others are French, and then, what we might least have expected, the thirteen varieties remaining are of English origin. I am giving the American growers credit for W. H. Lincoln and W. Tricker, which I ought not strictly to do, because they originally came from Japan, but reached us via America. The total votes for these six amount to 162, and those for the six French amount to 196. Results like these are deserving of some reflection, and American raisers will be able to judge by such statistics of the value of not only their own productions but also of those of their greatest competitors.—C. H. P.

MESSRS. W. & G. DROVER AND EXHIBITING.

DURING the last few years Messrs. W. & G. Drover of the Fareham Nurseries have been among the most successful exhibitors of cut blooms of Chrysanthemums. I have no hesitation in saying that the examples of the various members of the "Queen" family exhibited by this firm at the Centenary Show of the National Chrysanthemum Society were the finest ever seen on the exhibition table. Not only were they of

immense size, but they possessed all the other qualities that go to make the blooms what they were—perfection. My object in penning this note, however, is to acquaint exhibitors generally that this firm have at last decided to retire from the exhibition arena, which they have done so much to sustain. In addition to the authority for this statement the present appearance of their plants justifies such a note. Owing to the pressure of the other part of their trade they are unable to continue longer as exhibitors. Managers of autumn exhibitions will no doubt regret this step, but exhibitors themselves will, I doubt not, rejoice.—E. MOLYNEUX.

AMERICAN SYSTEM OF JUDGING CHRYSANTHEMUMS.

IN your issue of May 24th, I notice on page 412 under "Judging Chrysanthemums" "P." makes a mistake in the scale of points for group of plants arranged for effect, limited to 150 square feet. The scale given by him should apply to single specimens and not to groups.—A. H. FEWKES, *Chairman Committee on Flowers, Massachusetts Horticultural Society*.

THE GARDENERS' ROYAL BENEVOLENT INSTITUTION.

ANNUAL DINNER.

THE supporters of this excellent charitable Institution held their fifty-fifth anniversary festival dinner at the Whitehall Rooms, Hôtel Métropole, London, on the 21st inst., under the presidency of Sir Julian Goldsmid, Bart., M.P. The Chairman was supported by a large company, about 120 gentlemen being present, these comprising well-known patrons of horticulture, with nurserymen, seedsmen, gardeners, and others. Amongst those present we noticed Messrs. N. N. Sherwood, H. J. Veitch, P. Crowley, R. M. Hogg, W. J. Nutting, James H. Veitch, T. F. Peacock (honorary solicitor to the Institution), J. Sebag Montefiore, N. L. Cohen, W. Icton, W. Y. Barker, G. Bunyard, G. W. Ryder, E. W. Cathie, G. A. Dickson, J. Laing, W. Frcmlin, W. Jeffries, J. Webber, G. Monro, A. Watkiss, H. Cutbush, W. Hutchens, G. Gordon, J. A. Dickson, A. W. G. Weeks, H. B. May, H. Turner, A. Turner, and R. Cannell. The floral decorations were better than those usually seen on such occasions, the tables being tastefully embellished with plants and cut flowers. Nepenthes, Odontoglossums, and Miltonia vexillaria were amongst the former, whilst the latter included Anthuriums, Cattleyas, Roses, Carnations, and Odontoglossums. Buttonhole bouquets of dark red and pink Carnations were provided for the visitors. Messrs. W. Cutbush & Sons, J. Laing & Sons, W. Paul & Sons (Waltham Cross), Paul & Son (Cheshunt), F. Sander & Co., C. Turner, J. Veitch & Sons, and B. S. Williams & Son, with others, kindly supplied the flowers. Excellent fruit was also forthcoming in abundance as dessert, and the arrangements being, as usual, admirably carried out by Mr. G. J. Ingram, assisted by the Stewards, a pleasant evening was spent.

The Chairman, after the customary patriotic toasts had been duly honoured, gave the toast of the evening—"Success to the Institution." In submitting this, he briefly alluded to the inauguration of the Institution in 1838, remarking upon the good which had been done by the supporters since that time, and how much was due to gardeners. He reminded those present that a cultivated taste, whether it was in art or literature, was most valuable, could not be too largely sought, and should receive the utmost appreciation. In the same degree those who studied and brought to perfection the beauties of Nature were equally deserving of recognition (hear, hear). Some may have viewed the magnificent landscapes of Switzerland and America, whilst others have seen the softer views of Naples and similar places; but nowhere was the work of Nature more apparent than in the beautiful flowers and splendid fruit which was laid before them. He believed that those who cultivated flowers and fruit—yea, even the more humble vegetables, were serving a most useful purpose. The work of the gardener, however, was often accomplished under the most trying circumstances, frost, cold, rains, and hail frequently destroying his labours, he being powerless against the forces of Nature. All interested in gardening, he said, should visit the establishments of celebrated nurserymen, and where efforts were made to improve upon the ordinary work of Nature by placing plants in the most favourable conditions under which they could arrive at and attain the greatest beauty. Referring more directly to the Institution the Chairman said he had been through the rules and noticed that special privileges were given to those who had subscribed for a number of years. Such advantages were thoroughly deserved, and all who were able should assist those who made an effort to help themselves. Gardeners, like other persons, were subject to the vicissitudes of life, for he knew of several persons who formerly occupied good positions, but were now reduced to the lowest ebb in life. To gardeners, therefore, the Institution appealed in the strongest possible sense. At the present time 157 pensioners, seventy-one men and eighty-six women, were receiving permanent aid, while during the existence of the Institution pensions and gratuities had been paid amounting to £60,000. The cost of the Institution per annum was £2800, while the reliable income was £2100, leaving £700 a year to be gathered in from outside sources. Much distress had prevailed amongst the gardening class during the past few years, and he therefore appealed with confidence on behalf of such an admirably managed Institution (applause).

Mr. H. J. Veitch, in responding, said he should like to emphasise the remarks of the Chairman, and refer to the climatic difficulties with which gardeners had to contend. He would go no farther back than 1893, when a severe drought was experienced throughout the country. This year opened favourably and with prospects of the brightest kind,

but as they all knew a cold wave had swept over the land, and as a natural consequence great destruction had taken place and thousands of pounds had been lost. He was proud of the fact, however, and took that occasion to mention it—that many gardeners were up watching on that recent frosty night in May, and thereby managed to save their crops. He was sure there were no servants in the country more anxious to do their duty than gardeners (hear, hear). The remuneration the majority of gardeners received, however, was inadequate in accordance with the position they held, and they were unable to provide for themselves in old age. The Institution, he said, was most economically managed, and practically the whole of the income was devoted to the pensioners. Still they were in need of more funds, as there were many candidates waiting for assistance. Referring to the generous manner in which pensioners were treated, Mr. Veitch reminded his hearers that seven pensioners, who had subscribed but very small sums, had received respectively £420, £255, £172, £380, £328, £346, and £255, while a man named Robert Hodge and his wife, who had not subscribed a penny, had received in pensions the sum of £552. He knew times were bad, but that should not prevent the wealthy remembering there were other persons worse off than themselves (cheers).

Mr. N. L. Cohen proposed the toast of the "Royal Horticultural Society, Royal Botanic Society, and kindred societies of London and the United Kingdom." It was, he said, a very comprehensive toast, and it would be a very happy thing if they could establish a sort of friendship with all these societies. It occurred to him that such a step would be helpful to the Institution. No one could visit flower shows—such, for instance, as that held in the Temple Gardens—without recognising the persevering efforts of gardeners.

Mr. Philip Crowley briefly responded, and in doing so alluded to the work of the Royal Horticultural Society, of which he said there were now over 3000 Fellows. There were also sixty affiliated societies, and numerous trials of new varieties of flowers and vegetables were annually made in the gardens at Chiswick.

Mr. W. J. Nutting tersely rendered "The Chairman," to which Sir Julian Goldsmid responded, remarking that as the original President of the Royal Gardeners' Orphan Fund he feared it would be thought he could only take a secondary interest in the Gardeners' Royal Benevolent Institution.

Mr. G. A. Dickson presented the toast of "The Stewards and Officers," eulogising the work accomplished by Mr. G. J. Ingram, who, he said, was a most hard-working Secretary. Mr. G. Monro responded, referring to the excellent attendance of the Committee and other officers at the meetings throughout the year.

Mr. G. J. Ingram, the Secretary, then announced the subscriptions, which included the following—Sir Julian Goldsmid, 105 guineas; Messrs. Rothschilds, £105; Messrs. James Veitch & Sons, £21; Baron Schröder, £20; Mr. James H. Veitch, £10 10s.; Sir Edwin Saunders, F.R.C.S., £10 10s.; Messrs. Hurst & Son, £25; Mr. H. Morley, £25; Mr. Owen Thomas, £25; Worshipful Company of Clothworkers, £10 10s.; Worshipful Company of Fruiterers, £5 5s.; with other sums, the whole amounting to about £1245.

Under the direction of Mr. W. E. Goodwin, a selection of vocal music was provided, the artistes being Miss Alice Motterway, Miss Edith Hands, with Messrs. Barry Lindon, Herbert Emlyn, and J. Saunders.

NOTES ON STRAWBERRIES.

SOME growers do not seem to give a good opinion of John Ruskin Strawberry, but in a Hampshire garden last year it behaved so remarkably well that it is now being extensively cultivated. It is in some localities an excellent early variety, and moreover forces well. For market purposes, too, it is said to be popular in certain districts, and it would be interesting to learn how far this report is correct. According to my experience it is a variety well worth growing.

A gardener of my acquaintance considers La Grosse Sucrée still one of the best early Strawberries in cultivation; but I am afraid many readers will not agree with him. There can be no doubt about its utility for forcing, though as an outdoor fruit I am of opinion that it is inferior in flavour to many other varieties. For pot culture, however, it cannot be too strongly recommended.—C.

THE UTILITY OF NOBLE.

THIS variety has been the cause of much comment at various times in the horticultural press, reference having been made to its earliness and inferior flavour. This season, however, Noble has been a decided boon to many cultivators for the early market supply, both from the open ground and as a forcing kind. For the latter purpose Noble increases in favour with those who grow Strawberries to ripen during March. A grower in this neighbourhood (South Hants) has been so successful with it this year that he intends growing a thousand plants for next season.

The berries are found to swell freely from the time they are "set;" some varieties have a fault in "hanging" as it were for several days when they attain the size of large Peas, but not so with Noble. No difficulty is found in fertilising the flowers if each one is gone carefully over with a camel-hair brush. The cultivator in question realised 6s. per lb. for fruit gathered the third week in March, which he considers a good paying price.

The first picking from out of doors, too, came from Noble on June 8th, and realised 11s. per basket, holding one gallon, or about 6 lbs. of fruit.

In some seasons Sir Joseph Paxton ripens its fruit before Noble, but the frost which occurred May 21st injured many of the early blooms of the former, while those of the latter variety were beyond harm in this respect. Of course there is no question amongst market men as to the quality of Noble as compared with that of Sir J. Paxton, but the earliness of ripening is the chief point considered.—E. M.

ALLAMANDA WILLIAMSII.

THIS Allamanda is a welcome addition to our stove plants, being very handsome as a climbing or pillar plant, and equally effective when grown in small pots and arranged with other occupants of the stove. It first originated in a private garden as a chance seedling, and was distributed a few years since by the firm whose name it bears, being awarded a first-class certificate by the Royal Horticultural Society, a merit which was well deserved.

Cuttings root readily in a brisk bottom heat. When rooted, place them singly in 3-inch pots, using a mixture of loam, leaf mould, and a little sand. Immediately they are well rooted shift again into 5 or 6-inch pots, using a little stronger compost than for the earlier potting. If required to bloom in these small pots pinch out the leaves when the plants are 6 or 8 inches in height. They will then produce several leads, which soon commence flowering, and by judiciously feeding will give a succession of growths and blooms till nearly midwinter. When needed for growing as a climber, trained to pillars or a balloon, the plants may be shifted as required into pots up to 12 inches in diameter, and grown in a brisk temperature with a fair amount of shade, but when flowers are wanted let the plants have abundance of sun.

This Allamanda is so free-flowering that it may be treated as a winter-blooming plant. For this purpose root the cuttings in May and grow the young plants more hardy, keeping all flowers removed until October, when the plants must have a position for sun and light and a temperature of not less than 60° by night. Where yellow flowers are appreciated a good supply may be produced by growing a number of plants as above stated, and these will give a good account of themselves for Christmas and the New Year's decorations.—W. J. IRELAND.



ORCHID JOTTINGS.

IT was gratifying to notice how beautifully the tables at the anniversary dinner of the Gardeners' Royal Benevolent Institution, on Thursday evening in last week, were decorated with Orchids. These, if I was not misinformed, were chiefly supplied by Messrs. F. Sander & Co., J. Veitch & Sons, B. S. Williams & Son, and other growers. Sprays of *Miltonia vexillaria* were very effective arranged with other flowers and fronds of *Adiantums*, the soft rosy tint harmonising with the other surroundings. Some unusually well-flowered plants of this useful decorative Orchid were also placed on the table, the same applying to richly coloured *Cattleyas*, and many chaste forms of *Odontoglossums*.

The mention of Orchids being used for decorating the tables on the above mentioned occasion reminds me how extensively these "floral gems" are now being grown for market purpose. Walking through Covent Garden a few days since I noticed a handsome bouquet of *Cattleyas* and other Orchids in a florist's window, whilst of *Miltonia vexillaria* and *Odontoglossums* there were, perhaps, hundreds of sprays. It is evident that an important trade in this phase of flower culture is developing; but whether it is likely to be overdone is quite another matter. At all events, the prices realised by growers for blooms of the more common Orchids are, I believe, not particularly high, and no wonder, for a handful of blooms can be purchased for a moderate sum in a florist's store. Still there is generally a brisk demand for *Cattleyas*, *Odontoglossums*, and *Oncidiums*, some of the latter being very popular.

Curiously enough, just as the preceding paragraph was written, a correspondent sent me a cutting from the "Graphic" referring to some costly Orchids, and which, by way of comparison, may be worth reproducing. The writer enumerates fifteen plants which he roughly calculates represent a value of £2000. These are—"1, *Masdevallia Harryana Gravesiae*, belonging to Mr. Graves, Orange, New Jersey, U.S.A., and for which he is said to have a standing offer of 500 guineas; 2, *Cypripedium Stonei platytænium*, of which at various times Baron Schröder has bought pieces for £106,

£159 12s., and £100, and Sir Trevor Lawrence and Mr. W. Lee bought one in partnership for £147; 3, *Cypripedium insigne* Sanderiana, still unique, of which bits have been sold for 72 guineas, 100 guineas, and 250 guineas; 4, *Odontoglossum crispum*, Burford variety; 5, *Odontoglossum Pescatorei Veitchianum* in the possession of Baron Schröder; 6, *Dendrobium Williamsianum*; 7, *Vanda cœrulea*; 8, *Odontoglossum Williamsianum*, probably a natural hybrid between *O. grande* and *O. Schleiperianum*; 9, *Dendrobium Sanderæ*, beyond price as yet; 10, *Vanda Lowi*; 11, *Aërides Lawrencei*, for which Sir Trevor Lawrence paid 260 guineas at auction; 12, *Saccolabium Heathi*, an albino of the Fox-brush Orchid, which Mr. Lee sold to Baron Schröder for 157 guineas; 13, *Cattleya Mendeli Bluntii*; 14, *Cattleya Parthenia*, an albino of *C. intermedia*; and 15, *Cattleya speciosissima* Sanderiana, for which Mr. A. Wilson of Sheffield paid 100 guineas." Flowers from these plants are not, of course, included in the Covent Garden Orchids.

Whilst glancing through a small but choice collection of Orchids a short time since I noticed a good plant of *Oncidium Phalaenopsis*, and remarked to my guide that it was not generally grown. He agreed with me in that respect, adding, "I think it is a pity, for it is a beautiful and useful Orchid when properly managed." Obviously that is so, and amateur orchidists who require a charming plant should include it in their collections. The form of the flowers is well represented in the woodcut (fig. 83), which has been engraved from a spray given me, and those who are unacquainted with the plant will be able to form an idea of its beauty when it is said that the dots, spots, and bars are of a peculiarly bright bluish purple or violet tint on a pure white ground. The plant is not of strong growth, but it succeeds admirably in a cool house, and this is one of the recommendations of the species, as it can be accommodated with the *Odontoglossums*, and any addition to the cool Orchids is most welcome.

According to Mr. Rolfe's description in the June number of "The Kew Bulletin," the new *Epidendrum Ellisi* "belongs to the section called by Lindley *Amphiglottium Schistochila tuberculata*, but cannot be identified with any of the described species. In the shape of the lip it approaches *E. Lindeni*, *Lindl.*, though the two are quite distinct in other respects. The sepals and petals, together with the pedicels and columns, are carmine-rose, the lobes of the lip pale lilac-rose, and the crest yellowish-white, with some orange-yellow in the cavity in front of the clinandrium." So much for the botanist's view of this Orchid, but the faithful illustration published in the *Journal of Horticulture* for April 26th of this year will, in my opinion, give the uninitiated a better idea as to the beauty of the flowers. As previously remarked, this charming species was exhibited by Mr. Welbore S. Ellis at the Drill Hall, Westminster, March 27th, when a first-class certificate was awarded for it.—SPECIALIST.

ROYAL HORTICULTURAL SOCIETY.

JUNE 26TH.

THERE being a special Rose Show held in connection with this meeting the Drill Hall, James Street, S.W., was well filled with exhibits. Orchids were not quite so numerous as usual, but hardy flowers made a fine display. The Southern Pink Society held a supplementary Exhibition, a report of which will be found elsewhere, this also applying to the Roses. Fruit and vegetables were not extensively shown.

FRUIT COMMITTEE.—Present: P. Crowley, Esq. (in the chair); with Rev. W. Wilks, Dr. Hogg, and Messrs. John Lee, T. F. Rivers, A. H. Pearson, T. J. Saltmarsh, J. Smith, H. Balderson, G. Wythes, J. Hudson, G. Reynolds, T. Glen, A. Dean, C. Herrin, and J. Cheal.

If experience is an educator then should the members of the Fruit Committee be good judges of Melons. It is, perhaps, to be feared that some of the senders of fruits may not so regard those whose duty it is to estimate their merits, especially when the verdict may be at variance with preconceived opinions. While no persons could be more delighted on the discovery of specially meritorious properties than the adjudicators, yet stern duty compels them to pass, however reluctantly, many a handsome fruit because its quality is distinctly below the standard as established by existing varieties. On the present occasion Mr. G. Wythes sent his seedling Melon Hero of Isleworth, for which an award of merit was granted in August. It is of the Victory of Bath type, and no higher award could be made on the present occasion. Mr. Crawford, The Gardens, Coddington Hall, Newark, sent a large fruit, also of the Beauty of Bath type, but though slices of it were bravely nibbled by the devotees they were all compelled to utter the fatal word—"passed." Mr. G. A. Bishop, Westley Hall Gardens, sent a very handsome, well netted Melon. It was thought its appearance might recommend it for market purposes; but all that could be said of its quality was "not bad," and no award could be made.

Mr. C. T. Copley, Ivy Mount, Leigham Court Road, Streatham, sent several Melons. Two of these were placed on the table to be cut, but their quality found not the least approval. These Melons, however, in

the bulk so captivated the eye of one of the members that he was constrained to propose a medal. A counter proposal was made that the member should eat one of the fruits. He made a bold attempt, but after getting through about a quarter of an ounce he slipped away among the crowd, and has not since been heard of. Mr. Hunt, Ashted Park Gardens, sent what he described as a very early Melon; and Mr. B. Ashton, Glossop Hall Gardens, Derbyshire, a fine-looking fruit, but no award could be made for either of them.

Mr. J. Collis, Bollo Laws, Chiswick, sent a dish of *May Queen Strawberry*, a large, fine-looking, firm Strawberry, earlier than Sir Joseph Paxton. It was thought to be of service as a market variety, and an award of merit was accorded. Messrs. Laxton Brothers sent two boxes of unnamed Strawberries, fine fruits, and a vote of thanks was awarded.

Mr. A. Offer, The Gardens, Handcross Park, Sussex, sent a dish of very fine examples of *Violette Hâtive* Peach gathered from a tree bearing a crop of 564 fruits. Those exhibited were very fine, with a Nectarine flavour. They were not considered to be *Violette Hâtive*, but the variety was thought to be one of the Sawbridgeworth seedlings, and a cultural commendation was unanimously awarded. A similar award was made



FIG. 83.—ONCIDIUM PHALAENOPSIS.

to Mr. J. H. Goodacre, Elvaston Castle Gardens, for fine bunches of the Rock Ferry Black Hamburg Grapes and Belle Bauce Peaches.

Mr. Wm. Divers, Weirton House Gardens, sent a dish of very long-podded Broad Beans and French Crab Apples (vote of thanks), and Mr. G. Taber, Rivenhall, Essex, sent pods of Taber's Duke of York Pea, very fine, for which an award of merit was made in June, 1893, after a trial at Chiswick, and this was confirmed.

There was a considerable display of vegetables and fruit on the side tables. Mr. Crawford was awarded a silver Banksian medal for a good assortment. Mr. W. Gleeson, Warren House Gardens, Stanmore, was granted a silver Knightian, and Mr. T. Coomber a silver-gilt Knightian medal for Pines, the former showing six and the latter twelve grand Queens. The awards were unanimous, as was a silver-gilt medal to Mr. G. Wythes for thirty-six varieties of vegetables, all grown outdoors except three—Cucumbers, Tomatoes, and Kidney Beans—and all of excellent table quality.

FLORAL COMMITTEE.—Present: W. Marshall, Esq. (in the chair); Messrs. J. Fraser, R. Dean, J. H. Fitt, H. Herbst, H. B. May, G. Stevens, R. Owen, C. F. Bause, C. J. Salter, J. Jennings, H. Cannell, J. D. Pawle, C. Beckett, H. J. Jones, C. E. Shea, J. Walker, C. Noble, J. T. Bennett Poë, H. Turner, G. Paul, C. T. Druery, and G. Gordon.

Messrs. Barr & Sons, Long Ditton, staged a collection of Pæonies and Irises, the blooms of both being bright and fresh. The varieties of the English and Spanish Irises were particularly good (silver Banksian medal). J. T. Bennett Poë, Esq., Holmwood, Cheshunt, staged blooms of Iris Xiphium Thunderbolt, and Mr. Anthony Waterer, Knap Hill Nursery, Woking, sent cut flowers of hardy Azaleas. Mr. A. Smith, Downley, High Wycombe, had cut Roses and sprays of Pansies (bronze Banksian medal).

Pæonies were extensively shown by Messrs. Paul & Son, Cheshunt, a few good varieties of these being Madame Crousse, La Fraicheur, Rosamond, Prince Imperial, La Perle, and Modesty. The same firm also sent cut blooms of various hardy plants (silver Flora medal). Mr. G. Yeld, York, exhibited Irises in variety, with blooms of Hemerocallis Frances, for which an award of merit was adjudged. Mr. M. Pritchard, Christchurch, staged hardy flowers of kinds, the most noticeable of these being *Spiræa astilboides floribunda* (award of merit), Delphiniums, *Papaver nudicaule*, and *Gillenia trifoliata* (silver Banksian medal).

Messrs. J. Veitch & Sons sent branches of flowering shrubs, including *Styrax japonica*, *Cæsalpina japonica*, *Olearia macrodonta*, and *Magnolia Watsoni*. The same firm likewise exhibited fresh and beautiful blooms of *Gloxinias*, *Streptocarpus* hybrids, *Rhododendrons*, and a plant of

Calistemon (*Metrosideros*) *speciosus*. Mr. J. Durrand, Kilburn, secured an award of merit for *Dracæna Durrandi*, which is described elsewhere. Cut blooms and branches of hybrid Sweet Briars and Roses were sent by Lord Penzance, Eashing Park, Godalming. Amongst these Bluebeard, Pomegranate, Constancy, and The Novice were the most attractive. Messrs. H. Cannell & Sons, Swanley, Kent, had Tuberous Begonias, including H. J. Infield (award of merit), and Dr. Nansen, a very dark variety. Messrs. Cannell also sent splendid plants of *Verbascum olympicum* (silver Banksian medal). Boxes of garden Roses were contributed by Messrs. G. Cooling & Sons, Bath, these including some beautiful varieties (bronze Banksian medal). Mr. J. Jennings, Ascott, exhibited a richly coloured Carnation named James O'Brien (award of merit). Blooms of Roses and Pinks came from Mr. B. Ladhams, Shirley, Southampton, and boxes of hybrid Sweet Briars from Messrs. Keynes, Williams & Co., Salisbury.

Carnations were well represented. Mr. C. Turner, Slough, sent a group of charming varieties, these comprising King of Scarlets, Germania, Rose Celestial, Charles Henwood, and others of equal merit (silver Flora medal). Mr. T. Bones, Heaton Gardens, Cheshunt, arranged a group of Carnation Yellow Queen (bronze Banksian medal), and Messrs. W. Cutbush & Son, Highgate, contributed a collection of "Malmaison" varieties (silver Banksian medal).

Messrs. Dobbie & Co., Rothesay, exhibited Violas arranged in sprays, which made a good effect (bronze Banksian medal). Mr. H. B. May, Dysons Lane Nurseries, Upper Edmonton, sent a number of ornamental foliage plants, including Crotons, *Dracænas*, *Ficus elastica* variegata, and others (silver-gilt Flora medal). In addition to the exhibits already mentioned, Messrs. J. Veitch & Sons sent a beautiful collection of Pæonies and Delphiniums, the latter being very fine (silver Flora medal). Messrs. Wallace & Co., Colchester, exhibited a number of Calochorti, and secured a botanical certificate for *C. Howellii*. In a competitive class J. Brutton, Esq., Yeovil, was awarded the first prize for a dozen spikes of Delphiniums. Several first-class certificates and awards of merit were adjudged for plants and flowers shown by some of the above mentioned exhibitors. These are described elsewhere.

ORCHID COMMITTEE.—Present: Mr. H. J. Veitch (in the chair); Messrs. J. O'Brien, E. Handley, H. J. Chapman, W. H. White, J. T. Gabriel, G. Hill, J. Douglas, S. Courtauld, W. H. Protheroe, T. B. Haywood, and C. J. Lucas.

Orchids were not so extensively shown as we have seen them. T. Statter, Esq., Stand Hall, Manchester, sent a very fine plant of *Lælia tenebrosa*, Stand Hall variety (cultural commendation), with a number of cut blooms of *Cattleyas* and other Orchids. Some plants of *Cattleya Mossiæ alba*, with cut flowers and other Orchids, were sent by F. Gurney Fowler, Esq., Glebelands, South Woodford, and Messrs. W. L. Lewis & Co., Southgate, staged a plant of *Cattleya Gaskelliana* Miss Maud Dowdney. Messrs. F. Sander & Co., St. Albans, contributed a group of choice species and varieties. Conspicuous amongst these were *Grammatophyllum Fenzlianum*, *Lælio-Cattleya Arnoldiana*, *Cypripedium Wallisi*, *C. Curtisi*, *Cattleya gigas* *Sanderiana purpurea*, *C. granulosa aurea*. The executors of the late Mr. George Hardy exhibited a plant of *Dendrobium Statterianum*.

Messrs. J. Veitch & Sons, Royal Exotic Nursery, Chelsea, sent plants of *Disa Veitchii* and *D. langleyensis*. The same firm also sent *Lælio-Cattleya Canhamiana* (first-class certificate) and *Cypripedium Schröderæ*. Messrs. Hugh Low & Co., Clapton, arranged a group of *Cattleyas*, *Masdevallias*, *Odontoglossums*, and *Cypripediums*, the whole making a good effect (silver Banksian medal). A small group of *Epidendrum vitellinum majus* shown by Messrs. W. Cutbush & Son, Highgate, attracted attention, as did the collection of *Odontoglossums* and *Cypripediums* brought by Messrs. Collins & Collins, Cumberland Park, Willesden Junction. Messrs. Charlesworth, Shuttleworth, & Co., Heaton, Bradford, contributed an interesting group, including *Lælia tenebrosa*, *Oncidium macranthum*, *O. crispum grandiflorum*, and *Vanda cœrulea* (silver Banksian medal).

Mr. H. F. Pitt, Rosslyn, Stamford Hill, sent a number of Orchids, including *Cattleya Mossiæ alba*, Pitt's variety, and *Cypripedium Curtisi* (bronze Banksian medal). The beautiful *Cattleya Warneri* was sent by Mr. G. Reynolds, Gunnersbury Park, Acton; and Sydney Courtauld, Esq. (gardener, Mr. A. Wright), exhibited a plant of *Cœlogyne Sanderiana*, with a number of small *Masdevallias*, for which botanical certificates were awarded.

CERTIFICATES AND AWARDS OF MERIT.

Angræcum Fournierianum (F. Sander & Co.).—The flowers of this species are rather small, with pure white sepals and petals, the inside of the lip being a bright green (award of merit).

Begonia Dr. Nansen (H. Cannell & Sons).—A very fine variety, with dark coloured blooms (award of merit).

Begonia H. J. Infield (H. Cannell & Sons).—A brightly coloured double variety, the flowers being large and of an orange scarlet shade (award of merit).

Carnation Mrs. F. A. Bevan (W. H. Lees).—An attractive variety of a rosy pink shade, but the fragrance is not very pronounced (award of merit).

Carnation James O'Brien (J. Jennings).—A strong growing variety, with large dark red flowers (award of merit).

Clematis Countess of Onslow (G. Jackman & Son).—This is a distinct form, the flowers being bell-shaped and purplish red in colour (first-class certificate).

Croton Mayi (H. B. May).—A narrow leaved variety, rich yellow blotched with green (award of merit).

Cypripedium Leysenianum (Jules Hye Leysen).—A distinct hybrid, the result of cross between *C. barbatum* Crossi and *C. bellatulum*. The flower is reddish purple, with darker coloured spots and lip (first-class certificate).

Dracæna Durrandi (J. Durrand).—An erect growing plant, with bronzy green leaves, margined light red (award of merit).

Eryngium alpinum (M. Pritchard).—This appears to be a better plant than some of the other species, the flower being large and well coloured (award of merit).

Hemerocallis Frances (G. Yeld).—The flowers of this variety are much larger than those of *H. flava*, and richer in colour (award of merit).

Lælio-Cattleya Canhamiana (J. Veitch & Sons).—This is a splendid bigeneric hybrid, being the result of a cross between *Lælia purpurata* and *Cattleya Mossiæ*. The sepals and petals are pure white, the lip rich purplish crimson (first-class certificate).

Lælia grandis Pittiana (H. T. Pitt).—A distinct form, the lip being blush coloured with a dark purplish crimson throat (award of merit).

Masdevallia Cassiope (T. C. Hincks).—The flower of this is dull red with darker coloured veins (award of merit).

Masdevallia Kumballiana (S. Courtauld).—A small plant of this species was exhibited, this bearing dark orange yellow flowers (award of merit).

Pæony La Perle (Paul & Son).—The flowers of this variety are medium in size, of a rosy pink colour (award of merit).

Pescatorea Klabochorum excellens (F. Sander & Co.).—A very distinct form, the lips of the sepal and petals being a dark purple (award of merit).

Phaius Sanderianus (P. Ralli).—This is a fine species, the sepals and petals are buff yellow, the lip being white (award of merit).

Spiræa astilboides floribunda (M. Pritchard).—A free flowering useful plant, in some respects an improvement on *S. japonica* (award of merit).

Sweet Pea Emily Henderson (H. Herbst).—A splendid pure white variety, the flowers being large and apparently freely produced (award of merit).



EVENTS OF THE WEEK.—Apart from the Rose shows, a list of which appears in another column, but few horticultural events of special interest will take place during the ensuing week. An evening fête will be held on Wednesday, July 4th, under the auspices of the Royal Botanic Society, in the Gardens, Regent's Park.

— THE WEATHER IN LONDON.—At last summer has apparently commenced in the metropolis and southern districts generally. The weather has been very warm since publishing our last issue, notwithstanding the occasionally rather strong winds. Sunday and Monday were bright, while on Tuesday, although somewhat cloudy, the temperature was high and the atmosphere oppressive; Wednesday bright.

— WOLVERHAMPTON FLORAL FETE.—As has been advertised in our columns, the Floral Fête will be held in the public park, Wolverhampton, on July 10th, 11th, and 12th. Gold, silver, and bronze medals are offered for Violas and Pansies, and, as usual, excellent money prizes for groups of plants, Roses, fruits, and other produce. The entries for plants close on July 2nd, and those for Roses on July 5th. Mr. W. A. Green, jun., is the Secretary, from whom particulars may be obtained.

— FRUIT CONFERENCE AT WORCESTER.—We understand that a Fruit Show and Conference will take place in the Shire Hall, Worcester, on Wednesday and Thursday, October 24th and 25th, in the present year. The President is the Right Hon. the Viscount Cobham. There will be classes for hardy fruits, dried and preserved fruits, vegetables, modes of packing for market, and Chrysanthemums, and the competition will be open to all persons living in Worcestershire.

— MINIATURE AND RAYLESS VIOLAS.—Mr. George Steel, Cornhill-on-Tweed, sends us a box of seedlings of these delightful and sweet-scented flowers all his own raising. In the yellow and white varieties of the large flowering type the colours are pure and most decided colours, and it is said that the habit of the plants is also good. Ethel Buckley and A. Picco are certainly gems; but Enchantress will perhaps be the most run on for bedding. The flowers sent were really beautiful and a credit to the raiser.

— MR. G. J. SYMONS, F.R.S., has, we understand, been awarded the Society of Arts silver medal for his paper on "Rainfall Records in the British Isles."

— AUTUMN-SOWN SWEET PEAS.—What a treat now are Eckford's Sweet Peas here! Great long lines 8 feet high, and such a blaze of colour. The beautiful delicate one called Primrose, quite a new colour; Gaiety is another really fine variety. The seeds were sown in the open last October, and the plants have been in flower since the end of May.—W. BAYLOR HARTLAND, *Cork*.

— TRENTHAM SHOW.—The annual Exhibitions of the Trentham Horticultural Society have by their magnitude and excellence attained a high position in the provinces. The prizes offered in the chief classes are of a distinctly substantial character, and bring out the best competition. Prizes to the value of £72 10s. are offered for a group of plants, the first prize £20 and a silver cup (by Messrs. Sanky & Son); the second, £20; third, £13; and fourth, £9. Roses are generously provided for, £20 being offered in the class for forty-eight blooms, £12, including the N.R.S. gold medal for thirty-six blooms, £15 for twenty-four blooms, and upwards of £20 for a decorative arrangement of Roses. Prizes of £10 10s., £4, and £2 are offered for a collection of hardy border flowers. Fruit has, as usual, good attention, £10 being provided as the chief prize for a collection of nine varieties, £5 for six varieties, and the same amount as the leading prize for four bunches of Grapes. There are also good open classes for other fruits, also for vegetables. The Trentham shows are famous for groups, cut flowers, Roses, floral decorations, and fruit, as well as cottagers' productions. The Exhibition will be opened by the Duke and Duchess of Sutherland. Schedules are now ready, and, as may be seen in an advertisement, may be obtained from Mr. L. T. Alford, Hon. Sec., Hanford, Stoke-on-Trent.

— BONGARDIA RAUWOLFI.—If Mr. W. E. Gumbleton (page 495) will refer to the most recent authority (1893) on botanical synonyms, Mr. Daydon Jackson's monumental "Index Kewensis," he will find the names as given in the article—viz., *B. Olivieri* and *B. Chrysogonum*, are synonyms of one plant. In Sir J. D. Hooker's notice of what he calls "a singular plant" in the "Bot. Mag.," t. 6244, 1876, the same synonyms are given, with the old Linnæan name, *Leontice Chrysogonum*, added. C. A. Meyer, in the "Genera Plantarum" (Benth. and Hooker) is responsible for the adopted name, *B. Rauwolfi*, published in 1873, the specific name commemorating its identification by Rauwolf in 1573, when it was described by him in a chapter of his travels quaintly headed, "A short and plain narration of plants which I gathered during my stay at Haleps, in and around about it, not without great trouble and danger, which I glued upon paper very carefully." Aiton, in his "Hortus Kewensis," tells us that it was introduced from the Levant prior to 1740. Mr. Gumbleton's experience of the plants seems to have been a characteristic one, as it has not infrequently been introduced and lost. It may interest him to learn that it is a common wild flower of the Holy Land. The paragraph of June 14th was not intended as an exhaustive notice of the plant.—THE WRITER OF THE NOTE ON *B. RAUWOLFI*.

— THE CRYSTAL PALACE (R.H.S.) FRUIT SHOW.—Schedules of this Exhibition, to which fruit growers will look with more than usual interest, are now ready for distribution. The prizes are grouped in six divisions. 1, Open to all—fruits grown under glass or otherwise. 2, Open to nurserymen—trees bearing fruit in pots. 3, Open to gardeners and amateurs—fruits grown in the open air. 4, Open to all—single dishes of fruit grown in the open air. 5, Dried fruits, not preserved in fluid or sugar, to be grown and dried in the British Islands. 6, Special prizes for packing various kinds of fruits. The chief money prizes are £10 for fifteen varieties of fruit, £5 for nine varieties, and the same for six varieties of Grapes. Gold or silver-gilt and silver medals are provided for nurserymen. A large number of prizes are offered for single dishes of Apples and Pears. Among the former we observed the hackneyed error, Pott's Seedling—mentioned for pointing out the proper designation, Potts' Seedling. It was raised by Mr. Potts, not Mr. Pott. The schedule contains 141 classes, but many persons will be sorry to see that the method of local societies has been followed of alternating the pages of the schedule with advertisements. The Exhibition is bound to be a very great one, and we hope its success will more than equal the most sanguine expectations of its promoters. It opens on September 29th, and continues for three days—a Sunday intervening. On the Saturday a lecture will be given on "Fruit Growing in Small Gardens;" on Monday on "Fruit Growing on a Large Scale;" on Tuesday on "Packing, Grading, and Marketing Fruit."

— A GARDENERS' CRICKET MATCH.—We are requested to state that a cricket match between past and present Kewites will take place at Kew Green, on Monday, July 9th. The match will commence at 2.30 P.M.

— THE "KEW BULLETIN."—We have received a copy of the "Kew Bulletin" for June, which, like preceding numbers, contains much interesting matter. In the issue before us we notice the following articles:—Treatment of Diseased Sugar Canes in the West Indies; the Citron in Commerce; New Orchids, Decade 9; Cold Storage of Fruit; Sisal Hemp at the Bahamas; Gambia Pagns, or Native Cloths; and some Miscellaneous Notes.

— GLADIOLUS RAMOSUS.—As a border flower this *Gladiolus* is well worthy of attention, not only because it is one of the few members of this family that is quite hardy, but on account of the extreme beauty of the blossoms and their usefulness during the month of June. If two or three bulbs are left undisturbed for a few years they quickly form a good sized clump, producing numerous flower spikes about 3 feet high, or in some cases more. The flowers are rose purple or magenta, the three lower petals have a pure white stripe down the centre of each. This is intensified by the purple edge joining the white line to the body colour.—S.

— EREMURUS HIMALAICUS.—I think it was towards the end of last year when Mr. Arnott stated in the *Journal of Horticulture* that the *Eremurus* would not bloom in Scotland any further north than Dumfries, if even there, as he considered it was not warm enough. Your correspondent may, therefore, be interested to know that I have *E. himalaicus* in bloom at present. The spike will be about 14 or 15 inches long, and the flowers pure white. It first bloomed with me in 1892, missed last year, but makes up for that this summer. I have shown it to several gardeners here, who greatly admired it never having seen anything like it before. It is perfectly hardy.—H. A., *Greenock*.

— STROBILANTHES DYERIANUS.—This is a most attractive easily grown foliage plant, and it must be a general favourite, for every one who sees it is impressed by its beauty. We grow it in a light stove, where it receives abundant sun, and is freely syringed. Cuttings root as readily as *Coleuses*, and the same cultural requirements seem to suit the plants admirably. This *Strobilanthes* is recommended for bedding purposes, but how it will answer in this respect I am still unable to say. The colour of the foliage is bright mauve, very attractive by day and beautiful by artificial light, which enhances its value as a decorative plant. When well grown the foliage attains a length of 10 inches, and the plant is altogether of a very striking appearance.—W. J. IRELAND.

— PANSY SHOW AT SHEFFIELD.—The first Pansy Show, held in connection with the Hallamshire Floral Society, took place on Saturday last at the Hallamshire Hotel. There were over thirty exhibitors, and the blooms were very good indeed. Prizewinners:—Twelve dissimilar Show Pansies.—First, Mr. Smedley; second, Mr. J. W. Shelley; third, Mr. G. Hancock. Six dissimilar Show.—First, Mr. E. Allen; second, Mr. G. Hancock; third, Mr. C. Wright. Three dissimilar Show.—First, Mr. C. Winterbottom; second, Mr. D. Lygo; third, Mr. C. Wright. Premier bloom, Mr. Allen, with a very fine David Rennie. Best seedling, Mr. G. Hancock, with a fine flower raised by Mr. Staton of Mosborough, and named "Mayflower." The judges, Mr. Wilson of Handsworth and Mr. Carlton of Sheffield, gave every satisfaction.

— ROYAL METEOROLOGICAL SOCIETY.—The closing meeting of this Society for the session was held on Wednesday, the 20th inst., at the Institution of Civil Engineers, Great George Street, Westminster, Mr. R. Inwards, F.R.A.S. (President), in the chair. Mr. R. H. Scott, F.R.S., read a paper on "Fogs Reported with Strong Winds During the Fifteen Years (1876-90) in the British Isles." Out of a total of 135 fogs 108 were associated with cyclonic, and twenty-seven with anti-cyclonic conditions. The majority of the fogs occurred with south-westerly winds, and with temperatures very close to the maximum for the day. Mr. R. H. Curtis, F.R. Met. Soc., read a paper on "Some Characteristic Features of Gales and Strong Winds." After calling attention to the unsatisfactory state of anemometry, and after describing the "bridled" anemometer at Holyhead, Mr. Curtis stated that the greatest force of an individual gust which he had met with was registered in December, 1891, and amounted to a rate of 111 miles per hour, which with the old factor would be equivalent to a rate of about 160 miles per hour.

— SHIRLEY AND DISTRICT GARDENERS' AND AMATEURS' ASSOCIATION.—The monthly meeting of this Society was held at the Parish Room, Shirley, on the 19th inst., the President, Mr. W. F. Spranger, presiding over a good attendance of the members. A most instructive lecture on "The Composition of Artificial Manures, and the Limits to their Economical Use in the Garden," was given by W. Frank Perkins, Esq., who explained the temporary exhaustion of the soil, and consequent necessity for manuring; farmyard manure answering all the requirements of the gardener when obtainable. Chemical manures Mr. Perkins divided under three heads—nitrogenous, potassic, and phosphatic; and exhibited a large number of samples in commerce under each head. The lecturer having replied to a number of questions put to him, W. H. Rogers, Esq., J.P., proposed a hearty vote of thanks to Mr. Perkins for his excellent and interesting lecture. A display of cut Roses and other flowers was made by Messrs. W. Perkins, T. M. Lord, A. Barlow, J. H. Allden, Col. W. S. Sinkins, Miss Todd, and Mr. B. Ladhams, F.R.H.S.

— ROYAL BOTANIC SOCIETY'S FLORAL FETE.—Owing to the wet weather which prevailed on Wednesday in last week, the Floral Fête and Children's Parade was held in the large tent in the Royal Botanic Society's Gardens. As usual there were ponies, mail carts, and Sedan chairs embellished with flowers, and prizes were awarded for the best of the designs. Groups of plants and collections of cut flowers were arranged by various nurserymen, to whom medals and certificates were adjudged for their respective exhibits. Messrs. Barr & Sons had hardy flowers in variety, as did Messrs. J. Cheal & Sons. Roses were splendidly shown by Messrs. F. Cant, Paul & Son, W. Rumsey, and G. Mount, while Messrs. Keynes, Williams & Co. sent boxes of hybrid Sweet Briars. Messrs. Dobbie & Co., Rothesay, contributed a large collection of Pansies and Violas, and Messrs. Kelway & Sons some hardy flowers, including Delphiniums and Gaillardias. Orchids were shown in excellent condition by Messrs. Hugh Low & Co., and Mr. J. R. Chard had table decorations of various styles. Mr. W. James arranged a group of foliage plants, as did Mr. R. Scott, gardener to Miss Foster, Regent's Park. Mr. D. Robins, Aylesbury, contributed a collection of cut Roses.

— PINKS.—I am writing this before Tuesday's Pink Show at the Drill Hall, but I am anticipating a most varied and beautiful display. I have been looking over some good Pink collections, and have been delighted to see what variety of colour is now being got into these hardy border flowers. Another excellent feature is that there is great variation in period of opening, some being almost over, having flowered so early; others are, and these constitute the bulk, at their very best, whilst some others are so late that not a bloom is yet expanded. Thus we have, even of the ordinary forms, blooms extending over some two months. That some Pinks, Ernest Ladhams for instance, will produce abundant bloom for fully three months, we had evidence last year. I hope in time we shall see more smooth-edged border varieties, for at present so many have lacinated edges. The great thing to rejoice over, however, is that Pinks are so admirably progressing.

— DIGGING COMPETITIONS.—I read with much amusement your report of the Widcombe digging competitions on page 496. All the same these are excellent in their way provided they are conducted on right lines. I think it would be better to fix a defined time for the competition rather than a given area of ground, as in such case it is probable that good deep work would be more encouraged than seems to have been the case in this instance. Lightning calculators may be all very well, but we do not want lightning diggers. I would sooner have six or eight rods of ground evenly and deeply dug throughout than ten or twelve badly. I once promoted a competition of that kind at Egham for boys, but do not know whether it was continued. I did not see the work performed, but judged by appearance and testing depth. Scamped digging, which always means shallow working, should never be encouraged.—A. D.

"BRUNISSURE" (BROWNING) DISEASE IN VINES.

UNTIL recently this disease was confined to the young growing shoots of Vines in pots, and generally attacked the extremity growths towards the end of the summer, which was not of material consequence, as these were, along with laterals and sub-laterals, about that time cut away in order to ripen the wood and induce rest. It, however, is a serious plague on young Vines that have not completed their growth by August, as it cripples all growth and prevents the further ripening of

the wood in the affected part, the Vines being much weakened in consequence.

Mr. Barron alludes to this disease in "Vines and Vine Culture" (page 101) as "a certain strange affection of the shoots and foliage, which, in lack of an authorised name, Mr. Blackmore of Teddington, who has directed our attention to this malady, suggests may be termed diptheritis or lorification, for the parts attacked assume ere long the consistency of leather, and finally that of wire almost. The first symptom is a contraction of the margin of the half-grown foliage till



FIG. 84.—VINE GROWTH AFFECTED WITH "BROWNING."

the leaf becomes like a cup inverted, then the stem loses its crisp clear substance, goes dull, and is channelled with lines of shrinkage. The tips of the shoots become flat and flaccid, all the gloss is lost and the vigour gone, and the disease descends from leaf to leaf until the whole tissue is hardened and the young wood becomes of a dirty black tint. The growth of the season is stopped, and the main stem, instead of gaining in bulk, is lessened.

"Young Vines alone, so far as our knowledge goes, are affected by this disorder, but they seem to take it alike, whether grown in pots or planted in their places. The roots appear to be perfectly healthy, the growth is robust and vigorous, the house has been managed as usual, there are no cold draughts or sudden changes, defects or excess of temperature, but suddenly this disease appears, and Vine after Vine is afflicted.

"This malady is contagious, or at any rate, epidemic; the symptoms seem to be distinct from all the recognised forms of mildew, and cannot be checked by the use of sulphur, yet further investigation may prove that it is of fungoid origin."

Thus Mr. Barron accurately diagnoses the disease, but since the foregoing extract was written the plague has not contented itself with attacking young Vines. My first acquaintance with it was on Vines grown in pots from eyes and too late in the season to be of any use, except as "cut-backs." It did not attack the forward Vines in pots, which were layered on Mr. Miller's plan, and described some years ago in the *Journal of Horticulture*. But the "browning" appeared on all the young shoots of some twenty Vines in a house about 30 yards away, being restricted to the laterals and sublaterals, and the only treatment adopted was that advised by Mr. Barron, namely, "cut below the parts affected, remove the tainted growth from the houses, and stimulate the Vines, if they have strength left to form healthier foliage." As the parts affected were of no consequence and the browning did not interfere in the slightest with the firm wood and principal leaves, no further notice was taken of the Vines. Besides, the Grapes were ripe, and the "browning" had no injurious effect on them; indeed, the malady did not reappear the following year on the Vines, but it appeared in some Tomatoes which were grown in the same house as the Vines in pots were the previous year, and the leaves became smaller by degrees.

This is mentioned because the Vines in pots in another house were in that year perfectly free from the "browning" of the previous season, though they were the same, but cut-backs, that were diseased the year before. The disease, therefore, was in the house, and it was traced to the pits being filled with leaves; yet I could not see anything tangible on the plants. There was no fungus apparently, but I obtained "sight" of some small micro-organisms that lead to further observations, and always with the same result—the determination of small yeast-like bodies that evidently increased by "budding." There was nothing, however, in the bodies that partook of the nature of a ferment, and they certainly were not bacterial, though like them assuming amœba-like shapes and manifestly having some power of locomotion.

Last year I received through the Editor of the *Journal of Horticulture* some blackened Vine growths; they were sticky and overgrown by fungal filaments, which did not appear to be the cause of the evil, but consequent on decay of the tissues. Nothing would induce it to "fruit," therefore the fungus could not be determined, and as it was not in living cells, no further notice was taken of the growths. But the fungus will be to the front, for it has been found on many Vine growths, and if no "fruits" can be detected it produces plenty of sclerotia. Yet that is hardly conclusive, though I have no doubt of its being *Polyactis cinerea*, which is one of the worst pests, as it will live as a saprophyte, and is most malignant as a parasite when decaying matter fails. Only for this fungus cropping up in connection with "browning" is it now alluded to, and we will give it a "little more rope" in view of speedier execution, if need be, at some future date. What it, however, wants on Vines if not to live (and it does so by feeding on organic matter) passes my understanding.

"Browning" is a disease affecting Vines and other plants chiefly at the points of the shoots, causing them to become brown or black, shrunk and tough, completely destroying all growth. It, however, commences by giving a somewhat thickened, stunted appearance to growths which are at first of a yellowish hue; that soon passes into the acute stage, when shrinking commences. An affected shoot is shown in fig. 84 at *A*, diseased down to the point *a*. The leaves (*b*) appear healthy, but they are suffused with disease; in fact, the shoot is only living on itself, for it is dead at the point (*c*), or the cane is from whence it was taken. *B* represents a more advanced stage of the disease, it having descended to the point (*d*), the five leaves below (not shown) being normal, but they must "go," as the cane from which the shoots spring is quite saturated with disease, the bark quite black and the pith a dark colour. *C* shows two joints of the cane without any green or live wood, except a little at the joints. The bark (*e*) is dark brown externally, darker inside and black next (*f*) the wood. The wood (*g*) is quite white, clean, and healthy, while the pith is very dark brown or black. The mischief, however, lies in the bark and that part adjoining the wood, which is saturated with disease, and quite dead. A dark patch of fungus is shown at *i*, and consists of mycelia with some sclerotia or felted mycelium here and there. The cane is the reverse of gross, and has been grown hard, as the joints are short and the wood firm. Indeed, they are double budded, there being buds on the side of the tendrils (*j*) at *k*. At *l* is shown the socket from whence the shoot *B* was removed; and also *l l*, that where the shoot *A* pushed from. The appearance of the disease as it is seen on young leaves (as those of laterals and sub-laterals) is represented in *D* and *E*, the blackening being confined to the edges, which turn downwards as the tissue is destroyed up to the live part (*m*).

Up to last year no examples were examined that showed the disease to affect the ripe wood, but it is certain that it is increasing in malignancy, and causing serious loss in several places, in some cases spoiling the crop, and in others killing the Vines.

A bit of a diseased shoot in vertical section, and magnified 130 diameters, is shown in fig. 85 at *F*. The cells in the rows (four) on the



Fig. 85.

DISEASED VINE SHOOT TISSUE AND SPORES OF FUNGUS (PLASMODIOPHORA VITIS, *VIALA ET SAUV.*), CAUSING "BROWNING" IN VINES.

left hand side are quite healthy, two (*n*) in the fifth are invaded by the disease, also one in the sixth at *o*, while *p* indicates the cells enlarged and destroyed by the disease plasma. The epidermal cells (*q*) are unusually small, and, of course, filled with air. The mycelial threads of the fungus are shown external of the host at *r*, and ramifying the tissues, which are destroyed at *s*, while some threads have reached the healthy cells, and pushing in the intercellular spaces (*t u*). The small circles in *p* represent spores, with which the diseased parts are saturated,

and they ouse from tissue in section. That is all there is to be seen with a power of 130 diameters, only there is something of a darker colour issuing from the diseased parts, and permeating the living cells (*n o*). The spores as seen on the slide are shown at *G*, magnified 130 diameters, and are more like yeast cells, only rounder, than anything else under the same power. Magnified 520 diameters, the spore (*H*) then appears about the size of a small Cabbage seed. It swells a little in germinating, as it does by pushing a tube (*I*), and as this grows it assumes an amœba-like shape (*J*), while when it clears out of its "shell" it is a leucophyte-looking body, which may or may not be capable of transmitting itself anywhere in fluids. Anyhow it works into the cells probably by emitting an acid which softens the cell wall, and once it gets its "nose" in the body soon follows, or leastwise the part inside grows and lives at the expense of the living matter of the host. In fact, the fungus grows so fast and stoutly as to greatly enlarge, even burst, the cells and let its spores out to do further mischief. This ousing gives the sticky feel to diseased parts.

The fungus was first recognised in this country by Mr. Massee, of Kew, and is a near ally of the slime fungus, causing finger-and-toe or clubbing in Cabbages and Turnips. It is called the Vine slime fungus (*Plasmodiophora vitis*, *Viala et Sauv.*).

How the germs work to the tips of the shoots is uncertain, but it certainly appears there first, and by cutting off the diseased parts, as Mr. Barron advises, it may perhaps be prevented spreading further. But to get at it in the canes is another matter. One thing sure about these slime fungi is that they hate lime, and the best thing to do would be to give the border where Vines are affected a good dressing of lime or gypsum, preferably lime for Vines, though gaslime about every fifth year is an antidote for clubbing in Turnips, along with a proper rotation of crops. Superphosphate should be avoided, or if used it ought to have one-third of gypsum mixed with it; but it is better to avoid superphosphates, as they only make the Turnips or Cabbages thrive for the express benefit of the slime fungus.—G. ABBEY.



ROSE SHOW FIXTURES IN 1894.

- June 28th (Thursday).—Canterbury, Eltham, and Sutton.
- " 30th (Saturday).—Brockham and Sittingbourne.
- July 3rd (Tuesday).—Bagshot, Diss, and Farningham.
- " 4th (Wednesday).—Croydon, Ealing, Ipswich, Lee,† Reigate, and Tunbridge Wells.
- " 5th (Thursday).—Bedford, Dublin, Hereford, and Norwich.
- " 7th (Saturday).—Crystal Palace (N.R.S.)
- " 10th (Tuesday).—Gloucester, King's Lynn, and Wolverhampton.*
- " 11th (Wednesday).—Hitchin and Ulverston.
- " 12th (Thursday).—Bath, Harleston, Woodbridge, and Worksop.
- " 14th (Saturday).—New Brighton.
- " 17th (Tuesday).—Helensburgh.
- " 18th (Wednesday).—Newcastle-on-Tyne.*
- " 19th (Thursday).—Halifax (N.R.S.), Halesworth, and Trentham.
- " 21st (Saturday).—Manchester.
- " 24th (Tuesday).—Tibshelf.
- " 26th (Thursday).—Southwell.
- " 28th (Saturday).—Bedale.
- Aug. 1st (Wednesday).—Chesterfield.

* Shows lasting three days. † A Show lasting two days.

Any date of Rose shows, or of other horticultural exhibitions where Roses form a leading feature, not named above, I shall be glad to receive as soon as fixed, for insertion in future lists.—EDWARD MAWLEY, *Rosebank, Berkhamsted, Herts.*

NATIONAL ROSE SOCIETY.—THE METROPOLITAN MEETINGS.

I THANK Mr. Mawley for his very neat tables (page 493) on the weather in 1887–88–89 and 90, which are exactly what I wished to see. Any of your readers will be able by them to note the fact that the weather in May and June this year has not been in the least similar to any of the four years tabulated.—C. J. G.

ROSES AT YORK.

I REGRETTED to see the tone of the note of "D., Deal," (page 493) on this subject, and think he will acknowledge on reflection that it was inconsiderate. Such comments are best at the end of the season; for "Let not him that girdeth on his harness boast himself as he that putteth it off" is an old saying and a wise one. There were practically no Hybrid Perpetuals out at Colchester at the time of the York Show, and how Mr. Frank Cant managed to scrape together seventy-two varieties, I, who was in his grounds a short time before, cannot think. Messrs. Harkness, too, are well known to have been rendered practically *hors de combat* by the frost. I do not want to disparage Mr. Mount's successes; but surely it is full early to institute those comparisons which Mrs. Malaprop tells us are "odorous."—W. R. RAILLEM.

THE PROSPECTS OF THE ROSE SEASON.

I REGRET to learn from the recent communication of your interesting contributor, Mr. Charles J. Grahame, that the famous rosariums of Bedale and Newtonards have suffered so terribly from the recent frosts; but Rose trees are like human nature in this respect—they possess a marvellous recuperative power. Soon after receiving Marchioness of Londonderry and Caroline d'Arden from the raisers last spring, I had to cut them down almost level with the ground. That was in the beginning of March; now they are producing magnificent shoots, every one crowned with a promising flower bud.

The influence of the frost is, however, at a later season much more tragic in its results, and therefore I think both Messrs. Dicksons and Harkness are greatly to be commiserated. The former have given us some of the finest Roses of modern times, while the Messrs. Harkness have proved themselves almost invincible exhibitors, especially in exceptional sultry seasons (like that of 1893), so fatal to the hopes of southern cultivators. In my own garden the Rose which has been most seriously affected—not by frost, but by excessive rain and the absence for days of essential sunlight—is *Maréchal Niel*. All the other Roses, especially the Teas, are exceedingly promising. In the extensive gardens at Logan Castle the Austrian Briars have suffered most. —DAVID R. WILLIAMSON.

YORK ROSE SHOW.

WHILE fully endorsing every word "*D., Deal*," has said on page 493 in regard to the very creditable position gained by Mr. Mount of Canterbury, I must take exception to the comparison he makes between his success at York and that of Mr. Frank Cant and Messrs. Harkness, and give my reasons. Firstly, the seventy-two class was not one which we should look on as a champion seventy-two, it being for thirty-six varieties. Secondly, Mr. Frank Cant was showing on the same day, and successfully, in several classes at Colchester Rose Show, and being in his native town and competing with his uncle, he had on such a day and against such a doughty champion as Mr. Benjamin Cant (who is "*nulli secundus*"), to put his best leg and Roses foremost. Thirdly, on Mr. Mount's own showing and statement to me he has not suffered one iota from the frost, whereas the northern rosarians have suffered severely, but not so badly, I hope, as my amateur friends in Notts, Berks, and Herts. I wish well to Mr. Mount, as I do to every professional who has to gain his living by the delightful occupation of Rose growing, but it would be gross flattery and of a character unlikely to be verified in the immediate future if I were to say I believed he is as yet on a par in the champion classes with either of the great Colchester growers in ordinary years, or with Messrs. Harkness in early seasons.—C. J. G.

ROSE SHOWS.

ISLE OF WIGHT.—JUNE 20TH.

HAVING been again asked by that enthusiastic rosarian Mr. Jeans (Vicar of Shorwell, I.W.) to judge Roses at the Show of the Society he successfully started last year, I promptly acceded to his request. To those who do not know "the island" well, or at all, I should say do not miss a chance of going there, and soon, and I may add when you are likely to be treated "*en bon camarade*," hasten to grasp the hand of welcome. It was under such happy auspices that I again visited this terrestrial paradise on the 19th inst., the Show being on the 20th. The Society had obtained permission from Mr. Spartali, a well-known Greek merchant of London, to have the meeting in his beautiful grounds, which are close to the sea at Shanklin. The managers, with a consideration for distant travellers which others, even our N.R.S. officials, might copy, gave ample time for the flowers to be staged, and the patience shown was well repaid in the result achieved. There was no hustling, ringing of bells, and shouting at the candidates, but everything was done with calmness and placidity, which seem characteristics of the islanders.

The professional competitors and their flowers would have done credit to any show in England; when I state the exhibitors included the Messrs. Benjamin and Frank Cant and Messrs. Paul & Son, and in other classes Messrs. Perkins of Coventry, I need not further expatiate. The only exception I can take to the otherwise perfect arrangements is in the schedule itself, as in the All England class the big and small men are mixed up, and the distinction between and alteration of these classes must be effected by the Secretaries and Committee of the Isle of Wight Rose Society before they will have a large and really good amateur competition. There are not six amateurs in all England who can compete with the faintest chance of success against the Cants of Colchester even in a small class.

The results of the competition were repetitions of what took place on the 13th June at Colchester, Mr. Benjamin Cant taking first for twenty-four distinct and trebles, and Mr. Frank Cant first for Teas and twelve Roses of one variety. In all cases when not first these gentlemen were second, and Messrs. Paul & Son took the third position, the amateurs, Mr. R. E. West and Dr. Seaton, being naturally somewhat outclassed. Mr. R. E. West, however, took first in small classes, limited to amateurs. Messrs. Paul & Son as usual won the premier position for garden Roses, for which they are deservedly famous. There was a severe contest for the best Rose, and opinions were divided as to the merits of two flowers, Mr. Frank Cant's *Comtesse de Nadaillac* and Mr. Benjamin Cant's *Madame Cusin*, but the former eventually obtained the award, the flower being absolutely faultless in purity of colour and form. Mr. Benjamin Cant's *Madame Cusin*, a very exceptional specimen,

being in fact the finest I have ever seen of that variety, with the exception of Mr. Foster-Melliar's medal bloom in 1893, was awarded a special N.R.S. medal.

In the local classes the advance made in the flowers staged by islanders, and the numbers competing as compared with 1893, was remarkable, and for this, if for no other reason, the Isle of Wight Rose Society and its founder are heartily to be congratulated. The island has every natural advantage of position and soil, and the inhabitants only require to be "enthused" with the love of high class Roses to become famous in that branch of horticulture. Everything is in their favour—proximity to the sea, pure air from both the Downs and the sea, and absence of the exhalations common to manufacturing and large towns on the mainland.

Everyone seemed pleased, even his opponents, that Mr. Jeans again won the championship of the island, and also the medal for the best Rose. There were other good flowers shown by Mr. Spittal, who had some of the most beautiful Roses in the show, *Lady Hamond Groeme*, *Sir Barrington Simeon*, *Lady Mary Gordon*, and Mr. Brook, who again won the Queen's gold medal. Messrs. Perkins of Coventry won the first prize for bouquets with a fine exhibit, and Miss Jones of Ryde deservedly won the first prize for a most tastefully arranged epergne. In the cottagers' class there was quite an exceptional exhibit of Roses by Mr. Isaac Attrill, who evidently could give many amateurs a lesson in Rose growing. I cannot close my remarks without thanking Colonel and Mrs. Browne for their hospitality to the judges and some of the exhibitors, which was appreciated most thoroughly.—CHARLES J. GRAHAME.

WESTMINSTER.—JUNE 26TH.

THE Show of Roses held at the Drill Hall, Westminster, took place on Tuesday, June 26th, when some grand blooms were staged. The entries in some of the classes were large, and the competition ranged remarkably close. Mr. B. R. Cant's stand of twenty-four, which won the cup, was superb, scarcely a faulty bloom being seen. We append a list of the prizewinners:—

In the class for twenty-four Roses, three blooms of each, Mr. B. R. Cant, Colchester, was first with a grand exhibit, including *Suzanne Marie Rodocanachi*, *Marchioness Dufferin*, *Ulrich Brunner*, *Mrs. John Laing*, *Magna Charta*, *Lady Mary Fitzwilliam*, *Marie Baumann*, *Heinrich Schultheis*, *La France*, *Dupuy Jamain*, *Madame Cusin*, *Gustave Piganeau*, *Marie Verdier*, *Etienne Levet*, *Margaret Dickson*, *Captain Hayward*, *Madame Gabriel Luizet*, *Comtesse de Nadaillac*, *Duke of Edinburgh*, *Cleopatra*, *A. K. Williams*, *Madame de Watteville*, *Prince Arthur*, and *Mrs. Paul*. Almost all of these were in superb form and thoroughly deserving of the premier position. Mr. Frank Cant, Braiswick Nursery, Colchester, was a good second, some of his blooms lacking the finish of those of his namesake. Amongst his best were *Suzanne Marie Rhodocanachi*, *Général Jacqueminot*, *Comtesse de Nadaillac*, *Souvenir d'Elise Vardon*, *Madame Gabriel Luizet*, *The Bride*, *Souvenir de S. A. Prince*, and *Cleopatra*. The third prize went to Messrs. Paul and Son, Old Nurseries, Cheshunt.

For twenty-four trusses of Hybrid Perpetuals, not more than two of a sort, the Rev. H. A. Berners, Harkstead Rectory, Ipswich, was first with *Madame Gabriel Luizet* (2), *Suzanne Marie Rodocanachi*, *La France* (2), *Madame Isaac Periere*, *A. K. Williams*, *Horace Vernet* (2), *Madame Marie Cointet* (2), *Gustave Piganeau* (2), *Madame Lacharme* (2), *Mons. Noman* (2), *Charles Lefebvre*, *Ulrich Brunner*, *Marie Baumann*, *Fisher Holmes*, *Dupuy Jamain*, and *Duke of Edinburgh*. R. L. Knight, Esq., Bobbing Place, Sittingbourne, was second with a charming exhibit.

There were five competitors in the class for twenty-four Hybrid Perpetuals, distinct, Mr. B. R. Cant being placed first with superb blooms, comprising *Boieldieu*, *Magna Charta*, *Marchioness of Dufferin*, *La Fraicheur*, *Ulrich Brunner*, *Annie Laxton*, *La France*, *Gustave Piganeau*, *Madame Gabriel Luizet*, *Suzanne Marie Rodocanachi*, *Her Majesty*, *Jeanie Dickson*, *Caroline Testout*, *Général Jacqueminot*, *Etienne Levet*, *Violet Bowyer*, *Thos. Mills*, *Viscountess Folkestone*, *Mrs. John Laing*, *Duke of Edinburgh*, *Mrs. Paul*, *Annie Wood*, *Margaret Dickson*, and *Duke of Wellington*. Mr. F. Cant was a very close second, his best blooms being *Gustave Piganeau*, *Comte Raimbaud*, *Etienne Levet*, *Caroline Testout*, and *Marie Rady*.

For twenty-four Teas and Noisettes, in not less than twelve varieties, the Rev. H. A. Berners was first with *Cleopatra*, *Madame Cusin* (2), *Catherine Mermet*, *Amazone*, *Souvenir d'Elise* (2), *Comtesse de Nadaillac* (3), *Mrs. Jas. Wilson*, *Madame Hoste* (2), *Innocente Pirola*, *Anna Ollivier* (2), *The Bride* (2), *Princess of Wales*, *Souvenir de S. A. Prince*, *Francisca Krüger* (3), and *Jean Ducher*. Mr. Perry, gardener to J. C. Tasker Esq., Middleton Hall, Brentwood, was second with fair blooms lacking finish.

For twelve Teas and Noisettes, not less than nine varieties or more than two of any one variety, the Rev. J. H. Pemberton, Havering-atte-Bower, Essex, took the first prize with charming blooms of *Comtesse de Nadaillac* (2), *Madame Cusin* (2), *Marie Van Houtte*, *Souvenir d'un Ami*, *Caroline Kuster*, *Catherine Mermet*, *Anna Ollivier*, *The Bride*, *Edith Gifford*, and *Jean Ducher*. The second position was taken by the Rev. A. Foster Melliar, Sproughton Rectory, Ipswich, with smaller but perfectly finished specimens, including *Maréchal Niel*, *The Bride*, *Madame Welche*, *Marie Van Houtte*, *Souvenir d'Elise Vardon*, and others.

In the class for six single trusses, R. E. West, Esq., Reigate, was first with *Anna Ollivier*, *Miss Edith Gifford*, *The Bride*, *Catherine Mermet*, *Marie Van Houtte*, and *Francisca Krüger*. There were no other com-

petitors in this class. The Rev. H. A. Berners was first with Comtesse de Nadaillac in the class for six single trusses of any one variety.

For twelve Roses, distinct, three trusses of each, Mr. George Prince, 14, Market Street, Oxford, was first with a splendid stand, including *Maréchal Niel*, *Souvenir d'Elise Vardon*, *Princess of Wales*, *Souvenir de S. A. Prince*, *Comtesse de Nadaillac*, the Hon. Edith Gifford, *Madame Cusin*, *Anna Ollivier*, *Cleopatra*, *Amazone*, *Madame Hoste*, and *Rubens*. Mr. F. Cant was second with a fine stand.

For twenty-four Tea and Noisette Roses, distinct, Mr. Geo. Prince was again first, showing in almost perfect form *Comtesse de Nadaillac*, Hon. Edith Gifford, *Cleopatra*, *Souvenir d'Elise Vardon*, *Maréchal Niel*, *Souvenir de S. A. Prince*, *Princess of Wales*, *Niphetos*, *Madame Cusin*, *Anna Ollivier*, *Miss Ethel Brownlow*, *The Bride*, *Rubens*, *Amazone*, *Catherine Mermet*, *Madame Hoste*, *Madame Lambard*, *Innocente Pirola*, *Madame de Watteville*, *Alba rosea*, *Marie Van Houtte*, *Golden Gate*, *Princess Beatrice*, and *Cornelia Koch*. Mr. F. Cant was second with a good stand.

Mr. George Prince was first in the class for twelve blooms of any one variety with superb specimens of *Comtesse de Nadaillac*, and Mr. F. Cant second with *Souvenir de S. A. Prince* in fine form.

NATIONAL ROSE SOCIETY—EXHIBITION AT WINDSOR, JUNE 27TH.

A GRAND exhibition of Roses was held at Windsor yesterday (Wednesday) under the auspices of the National Rose Society. Notwithstanding the damage done by frosts in May, there was an excellent display, and the blooms exhibited were on the whole of good quality. Hybrid Perpetuals were fresh and well coloured, the Teas being also well represented. No less than thirty-three classes were provided, and in most of these the competition was keen, especially so for the Queen's cup, which formed one of the chief attractions of the exhibition. Most of the professional and amateur rosarians were present, the southern growers being in strong force. Owing to the unusual pressure on our space this week we are compelled to curtail the report of this fine show, but append the names of the prizewinners in the principal classes.

In the open class for forty-eight, distinct, single trusses, of Hybrid Perpetuals, there was a close fight for the premier position, which was gained by Mr. B. Cant, Colchester. The flowers staged by this exhibitor were fresh and beautiful. The following were the varieties:—First box.—Back row: *Marie Baumann*, *Marguerite de St. Amand*, *Madame Isaac Periere*, *La France*, *Duke of Edinburgh*, *Her Majesty*, *Gustave Piganeau* (grand), *Madame Gabriel Luizet*. Middle row: *Mrs. Paul*, *Crown Prince*, *Cleopatra* (good), *E. Y. Teas*, *Maréchal Niel*, *Jean Soupert*, *Madame Hippolyte Jamain*, *Boieldieu*. Front row: *A. K. Williams* (splendid), *Margaret Dickson*, *Fisher Holmes*, *Violette Bouyer*, *Beauty of Waltham*, *Spencer*, *Madame Cusin*, *Général Jacqueminot*. Second box.—Back row: *Duchesse de Morny*, *Ernest Metz*, *Marchioness of Dufferin*, *Madame de Watteville*, *Ulrich Brunner*, *Lady Mary Fitzwilliam*, *John Hopper*, *Mons. Noman*. Middle row: *Merveille de Lyon*, *Dupuy Jamain*, *Madame Eugénie Verdier*, *Louis Van Houtte*, *Marie Van Houtte*, *Mrs. J. Laing*, *Marguerite Boudet*, *Suzanne Marie Rodocanachi*. Front row: *Ethel Brownlow*, *Comte de Raimbaud*, *Devoniensis*, *Marie Finger*, *Auguste Rigotard*, *Duchesse de Vallambrosa*, *Duke of Wellington*, and *Baroness Rothschild*. Mr. Frank Cant, Braiswick Nursery, Colchester, was second with smaller flowers, the third prize going to Mr. G. Mount, Canterbury. These were the only exhibitors in this class.

Messrs. D. Prior & Sons, Colchester, secured the leading prize for twenty-four, distinct, single trusses, staging a box of fresh blooms. These were—back row: *Duke of Wellington*, *La France*, *Prince Arthur*, *Souvenir de S. A. Prince*, *Gustave Piganeau*, *Mrs. J. Laing*, *Ulrich Brunner*, *François Michelon*. Middle row: *Suzanne Marie Rodocanachi*, *Duke of Edinburgh*, *Dupuy Jamain*, *Prince Camille de Rohan*, *Mons. Noman*, *Marie Rady*, *Duchesse de Morny*, *Fisher Holmes*. Front row: *Comte de Raimbaud*, *Captain Christy*, *Chas. Darwin*, *Anna Ollivier*, *Auguste Rigotard*, *Merveille de Lyon*, *Horace Vernet*, and *Marie Baumann*. Messrs. G. & W. Burch, Peterborough, were second, and Mr. G. Prince, Oxford, third. There were five competitors in this class.

For twenty-four distinct varieties, three trusses of each, Mr. B. Cant, Colchester, was first, staging very fine flowers. These were *A. K. Williams* (magnificent, medal Rose), *Violette Bouyer*, *Prince Arthur*, *Lady Mary Fitzwilliam*, *Suzanne Marie Rodocanachi*, *Maréchal Niel*, *Dupuy Jamain*, *Madame Gabriel Luizet*, *Marie Baumann*, *La France*, *Fisher Holmes*, *Mrs. Paul* (grand), *Her Majesty*, *Gustave Piganeau* (excellent), *Mons. Noman*, *Ulrich Brunner* (fine), *Madame de Watteville*, *Camille Bernardin*, *Margaret Dickson*, *Beauty of Waltham*, *Marie Verdier*, *Général Jacqueminot*, *Jeannie Dickson*, and *Duke of Edinburgh*. Messrs. D. Prior & Sons were second, and Mr. G. Mount third. There were six competitors in this class.

Eight competitors staged blooms in the class for twelve single trusses of any Hybrid Perpetual or Hybrid Tea, and the fight was consequently close. Mr. B. Cant won the first prize with a box of *Margaret Dickson*, the blooms being large, fresh, and of splendid form. Messrs. D. Prior and Sons followed with good flowers of *La France*; and Mr. Frank Cant was third with the same variety.

Mr. T. B. Haywood, Woodhatch Lodge, Reigate, secured the first prize for twenty-four single trusses, distinct, in the amateurs' class. The flowers were rather small, but fresh and well coloured, especially *Gustave Piganeau*, *Dr. Andry*, *A. K. Williams*, *La France*, and *Duke of Wellington*. Mr. S. P. Budd, Bath, was awarded the second prize, there being no other competitor.

In the class for eighteen Hybrid Perpetuals, open to growers of less than 2000 plants of varieties in the N.R.S. catalogue of exhibition

Roses, there were three competitors. Mr. R. E. West, Reigate, was awarded the Turner Memorial cup as first prize for a box of good blooms. The varieties shown were *La France*, *Etienne Levet*, *Madame Gabriel Luizet*, *Ulrich Brunner*, *Dr. Andry*, *Her Majesty* (good), *A. K. Williams*, *Madame Isaac Periere* (grand), *Comte de Raimbaud*, *Dupuy Jamain*, *Duke of Edinburgh*, *Marie Baumann*, *Marie Finger*, *Victor Hugo*, *Marquise de Castellane*, *Louis Van Houtte*, *E. Y. Teas*, and *Baroness Rothschild*. The Rev. H. A. Berners, Ipswich (gardener, Mr. G. Jordan), was second; and Mr. A. Slaughter, Steyning, third.

As already mentioned the Queen's Cup class for twelve blooms, distinct, open to amateurs, formed a leading feature of the Show. There were eighteen entries in this class, and of these thirteen growers staged flowers. The Rev. Hugh A. Berners, Harkstead, Ipswich, proved to be the fortunate winner, this grower showing a box of grand blooms. They were arranged as follows:—Back row: *Madame Gabriel Luizet*, *A. K. Williams*, *Her Majesty*, *Chas. Lefebvre*. Middle row: *Comtesse de Nadaillac*, *La France*, *Madame Isaac Periere*, *Mons. Noman*. Front row: *Dupuy Jamain*, *Souvenir d'Elise Vardone*, *Violette Bouyer*, and *Gustave Piganeau*. Mr. Osmond G. Orphen was second with smaller though fresh flowers; the Rev. F. R. Burnside, Hereford, being third. In Mr. Burnside's stand was a magnificent bloom of *Cleopatra* which



FIG. 86.—REV. HUGH A. BERNERS.
(Winner of the Queen's Cup.)

secured the silver medal for the best amateur's Tea in the show. Mr. A. Slaughter, Steyning, was awarded the fourth prize in this class. The second, third, and fourth prizewinners were awarded a silver-gilt, silver and bronze medal respectively. We have pleasure in publishing Mr. Berners' portrait (fig. 86), and congratulate him on his success in winning the Royal cup.

In the class for twelve, distinct, single trusses, open to growers of less than 1000 plants, Mr. Osmond G. Orphen, West Bergholt, Colchester, was first with a box of fine blooms, the best being *Gustave Piganeau*, *Jeannie Dickson*, *A. K. Williams*, and *Charles Lefebvre*. Mr. J. Bate-man, Highgate, was second, and Mr. J. Helgar, Datchet, third. Mr. Harcourt Landon, Brentwood, was first with six distinct, single trusses, open to growers of less than 500 plants; Mr. R. H. Langton, Hendon, second; Mr. W. D. Freshfield, Reigate, third; and the Rev. G. E. Jeans, Shorwell, Isle of Wight, fourth.

Teas and Noisettes.—These were very good on the whole, the flowers in some of the boxes being fresh and of excellent form. There were, however, not many entries in some of the classes. Two growers only competed in the class for twenty-four distinct, single trusses, these being Mr. G. Prince, Oxford, and Mr. Frank Cant, to whom the first and second prizes were awarded respectively. Mr. Prince's blooms were remarkably good, and the varieties shown were *Comtesse de Nadaillac*, *Souvenir d'Elise Vardon*, *Princess of Wales*, *Souvenir de S. A. Prince*, *Maréchal Niel*, *The Bride*, *Cleopatra*, *Niphetos*, *Cornelia Koch*, *Catherine Mermet*, *Anna Ollivier*, *Madame Cusin*, *Luciole*, *Marie Van Houtte*, *Innocente Pirola*, *Miss E. Brownlow*, *Amazone*, Hon. Edith Gifford, *Madame de Watteville*, *Madame Elie Lambert*, *Madame Hoste*, *Rubens*, *Souvenir d'un Ami*, and *La Boule d'Or*. Mr. Frank Cant's flowers were smaller, but fresh, and in good condition.

Mr. J. Mattock, New Headington, Oxford, won the first prize for twelve Teas or Noisettes, showing *Comtesse de Nadaillac*, Hon. E. Gifford, *Maréchal Niel*, *Souvenir de S. A. Prince*, *Marie Van Houtte*, *Catherine Mermet*, *Souvenir de Paul Neyron*, *Souvenir de Thérèse Levett*, *Souvenir d'un Ami*, *The Bride*, *Anna Ollivier*, and *Madame Hoste*. Messrs. D. Prior & Sons were second, and Messrs. G. & W. Burch third. There were five competitors in this class.

The Rev. H. A. Berners secured the piece of plate presented by W. Colin Romaine, Esq., for eighteen blooms of Teas or Noisettes, open to amateurs. The flowers staged were good, especially *Catherine Mermet*, *The Bride*, *Madame Cusin*, and *Jules Finger*. Mr. Osmond G. Orphen was first with nine blooms of Teas or Noisettes, open to growers of less than 500 plants; Mr. A. Tate, Downside, Leatherhead, being second; and Mr. A. Slaughter third. Mr. W. D. Freshfield won in the class for

six Teas, open to growers of less than 200 plants; Mr. Harcourt Landon, and Mr. J. Bateman following in the order of their names. The second prize was awarded Mr. A. Slaughter for six Teas, three trusses of each, there being no other competitor in this class, which was open to all amateurs. For six single trusses of any Tea or Noisette, open to all amateurs, the Rev. F. R. Burnside won, staging splendid blooms of Cleopatra; the Rev. H. A. Berners was second; and Mr. A. Slaughter third.

Mr. G. Prince secured the premier award for twelve Teas or Noisettes, three trusses of each, open to nurserymen and amateurs. The flowers were fresh and of excellent form, particularly Madame Hoste, Cleopatra, Madame Cusin, and Comtesse de Nadaillac. Mr. B. Cant followed with splendid blooms; and Messrs. D. Prior & Son were third. Mr. Prince repeated his success in the class for twelve blooms of any Tea, showing magnificent blooms of Comtesse de Nadaillac. Messrs. D. Prior & Sons were second with twelve blooms, showing Marie Van Houtte in good condition.

The extra amateur classes were well filled. The Rev. J. H. Pemberton, Havering-atte-Bower, won with six blooms of any H.P. or H.T., showing La France in very fine condition. Mr. S. P. Budd won with eight varieties, three trusses of each, the Rev. H. A. Berners being second, and Mr. A. Slaughter, third.

Garden Roses.—For a display of Roses Mr. J. Mattock was first, staging bunches of Teas, Noisettes, and other varieties. Mr. G. Mount was second, and Messrs. Paul & Sons, Cheshunt, third. Mr. C. E. Cuthell, Chapel Croft, Dorking, was first with eighteen bunches of garden Roses, Mrs. Irving second, and Mr. A. Tate third. Messrs. Cooling & Sons, Bath, were awarded the first prize for thirty-six bunches of garden Roses, Messrs. Paul & Son being second. Mr. Osmond G. Orphen, won with six bunches of garden Roses, Mr. Johnston being second, and Mr. B. Campbell third.

Medal Roses.—The best Hybrid Perpetual Rose in the show, exhibited by a nurseryman, was a splendid bloom of A. K. Williams shown by Mr. B. Cant. The Rev. J. H. Pemberton staged the best Hybrid Perpetual in the amateur classes, this being a superb flower of La France. Mr. G. Prince secured the silver medal for the best Tea or Noisette in the nurserymen's class with a fine example of Comtesse de Nadaillac, and, as previously mentioned, in the amateurs' section the Rev. F. R. Burnside won that distinction with a magnificent bloom of Cleopatra. Experts expressed the opinion that Mr. Burnside's flower was the finest specimen of Cleopatra that had ever been exhibited.

Miscellaneous Exhibits.—These were numerous and of a diversified character. Messrs. Dobbie & Co., Rothesay, sent a collection of Violas arranged in sprays; and Messrs. Harkness & Sons, Bedale, staged a large number of hardy flowers in variety. Mr. E. F. Such, Maidenhead, also staged hardy flowers, chiefly Gaillardias and Roses; while Messrs. W. Cutbush & Sons, Highgate, contributed Carnations in excellent condition. Messrs. G. Jackman & Son, Woking, sent several boxes of Roses. Messrs. J. Laing & Sons, Forest Hill, had a fine group of Tuberous Begonias; and Messrs. J. Veitch & Sons staged a large collection of Pæonies and Delphiniums. Mr. C. Turner, Slough, had a group of Carnations in pots and cut Roses; while Messrs. B. S. Williams and Son and J. Peed & Sons were represented by groups of foliage and flowering plants. Mr. Owen Thomas, gardener to Her Majesty the Queen, sent an attractive group of plants from the Royal Gardens.

There was a fair display of fruit, and vegetables in competition for prizes given by Messrs. Sutton & Sons were excellent. In the local classes for Roses, floral decorations, groups of plants, and vegetables the exhibits were above the average in quality.

RICHMOND HORTICULTURAL SOCIETY.

JUNE 27TH.

THE annual show of the Richmond Horticultural Society was held on Wednesday last in the Old Deer Park, and was favoured with brilliant weather. The exhibits were, as usual, very numerous, and the quality excellent. Groups were fairly well shown, and specimen plants were seen in grand condition. Roses, too, were very finely shown, both in the amateurs' and open classes. We append a list of the prizewinners in the principal classes, space not allowing of full details being given.

For a group of plants in or out of flower, arranged for effect, in a space not exceeding 100 square feet, there were four competitors, the first prize being accorded to Mr. W. Finch, gardener to J. Marriott, Esq., Coventry, with a good exhibit. Crotons, Palms, Hydrangeas, Ferns, Coleuses, Petunias, and Caladiums were well represented. Mr. H. C. Fordham, Twickenham, was second with a splendidly arranged group; and Mr. J. Parsons, gardener to J. Twining, Esq., Penryn House, Twickenham, third.

In the class for six stove and greenhouse plants in flower Mr. Finch was first with well grown specimens, including Bougainvillea glabra, Erica Cavendishi, and others. Mr. J. F. Mould, Pewsey Nursery, Wilts, was second; and Mr. J. Parsons, third. For a specimen flowering plant Mr. Finch was first with Erica depressa, Mr. G. Hutton, gardener to G. E. Frere, Esq., Wimbledon Park, second with Allamanda Hendersoni, and Mr. Parsons third, with Clerodendron Balfourianum.

For six foliage plants, distinct, Mr. Finch was first with grand specimens; Mr. W. Farr, gardener to A. Pears, Esq., Isleworth, second; and Mr. Mould third. For a specimen foliage plant, Mr. Want, gardener to F. Wigan, Esq., East Sheen, was first with Cycas revoluta; Mr. Finch second with Cordyline indivisa; and Mr. Burton, gardener to

Sir E. D. Paul, Bart., Twickenham, third with Cycas revoluta. Mr. Want was first for six Ferns with splendid plants; Mr. Jones, gardener to J. Wigan, Esq., Mortlake, second; and Mr. Burton third.

Mr. Portbury, gardener to W. N. Froy, Esq., Ripon House, Putney Hill, was first for a group of Begonias with splendid examples; Mr. Meaton, gardener to J. B. Hilditch, Esq., Richmond, second; and Mr. D. Scott, Richmond, third. For a group of Pelargoniums, Mr. Chas. Turner, Royal Nurseries, Slough, was the only exhibitor, and was awarded the first prize. For six Show and decorative Pelargoniums the same exhibitor was first, as also was he for six Fancy varieties, distinct.

There were two competitors in the class for six exotic Orchids, distinct. Mr. Howard, Orchid grower to H. Little, Esq., Twickenham, was first with specimens of Laelia purpurata, Vanda teres, Dendrobium suavisimum, Aërides Fieldingi, Odontoglossum vexillarium, and Cattleya Mendeli; Mr. W. H. Young, gardener to F. Wigan, Esq., East Sheen, being a fair second. The first prize for six Zonal Pelargoniums went to Mr. G. Watts, gardener to H. Little, Esq., Twickenham, and the third to Mr. F. Barnes, gardener to W. S. Grahame, Esq., Abercorn, Richmond.

Mr. S. Nunn, gardener to P. Ranken, Esq., East Sheen, was first for nine Gloxinias in the class for the special prize offered by the Right Hon. Countess Russell with superb plants, and Mr. J. Smith, gardener to W. H. Odum, Esq., Isleworth, second.

For forty-eight Roses, distinct, three trusses of each, Mr. F. Cant, Colchester, was first with a fine stand. La France, Mrs. John Laing, Marie Van Houtte, Countess of Rosebery, Gustave Piganeau, Général Jacqueminot, were amongst the best; Mr. G. Mount, Canterbury, being second with good blooms. Mr. B. R. Cant, Colchester, was first for twenty-four Roses, three blooms of each, showing Suzanne Marie Rodocanachi, Général Jacqueminot, La France, Madame Gabriel Luizet, and others in superb condition. Mr. F. Cant was second, and Messrs Perkins & Sons, Coventry, third.

In the class for twelve blooms of any one Hybrid Perpetual, Messrs. Perkins & Sons were first with Lady Mary Fitzwilliam; Mr. Mount second with A. K. Williams; and Mr. B. R. Cant third with La France. For twelve Teas, any one variety, Mr. F. Cant was first with good blooms of Souvenir de S. A. Prince; Mr. B. R. Cant second with Madame Hoste; and Mr. Mount third with Anna Ollivier.

In addition to the plants and flowers previously mentioned, both fruits and vegetables were splendidly shown in fairly large numbers. Amongst the former Grapes, Melons, Peaches, and Nectarines were somewhat numerous and in excellent condition. The vegetables shown by Messrs. Waite and Sage were grand. Amateurs' vegetables were well represented, and were creditable to their growers.

Miscellaneous exhibits were numerous, and included Roses and other flowers from Messrs. W. Paul & Sons, Waltham Cross; foliage and flowering plants from Mr. W. Iceton, Putney; Carnation Uriah Pike from Mr. G. May and Mr. J. Pike; Roses, Liliums, and Hydrangeas from Messrs. Jas. Veitch & Sons, Chelsea; foliage and flowering plants from Mr. W. Thompson, Sheen Nurseries, Richmond; a grand group of plants from Mr. Wythes, gardener to the Duke of Northumberland, Syon House, Brentford; general plants from Messrs. J. Peed & Sons, Norwood; foliage plants from Mr. McLeod, Dover House Gardens, Roehampton; Begonias and other plants from Messrs. J. Laing & Sons, Forest Hill; flowering plants from Mr. Mould, Pewsey Nursery; Begonias from Mr. J. R. Box, Croydon; Roses from Messrs. Jackman and Son, Woking; hardy flowers from Messrs. J. Cheal & Sons, Crawley; Mr. B. Ladhams, Shirley, Southampton; Messrs. W. Cutbush & Sons, Highgate, Messrs. J. Peed & Son; and Messrs. Barr & Sons, King Street, Covent Garden.

SCOTTISH PANSY SOCIETY.

JUNE 22ND.

THE Jubilee Exhibition of the Scottish Pansy Society was held in the Oddfellows Hall, Edinburgh, on Friday, June 22nd. The show was considered an average one as regards competition and quality of flowers. Owing to the unseasonable weather experienced for some time some of the blooms were, however, a little rough. The competition in the nurserymen's class for Show Pansies was limited, but in the amateurs' class, and that for practical gardeners, there were a good number of stands.

In the nurserymen's class Mr. A. Irvine, Tighnabruich, was first (Jubilee Medal) for twenty-four Show Pansies, dissimilar, with flowers of good size and form but unnamed. Mr. John Forbes, Hawick, was second with smaller flowers. For best twenty-four Fancy Pansies, Mr. J. Smellie, Bushby, won the Jubilee Medal with a good stand consisting of Mrs. D. Johnson, Jeanie P. Tait, B. Renshaw, a seedling, Wm. Wilson, Agnes Mabel, Lady Duff, Mrs. W. Watson, Miss Paterson, Jas. S. Irvine, John Myles, Wm. Watson, Mrs. John Smellie, Marmion, Ella Murray, Maggie Watson, Mrs. Robt. Thompson, Maggie Scott, Mrs. F. A. M'Gill, Beauty, Geo. H. Clark, Andrew Frater, Archie Buchanan, and C. H. Johnston. Mr. M. Campbell, High Blantyre, was second; and Mr. A. Lister, Rothesay, third, both with good flowers. Mr. J. Smellie was also first for six seedling Show Pansies; second Mr. A. Lister.

There was a good competition for the Jubilee Medal for twenty-four bunches bedding Violas, and Messrs. Dicksons & Co., Edinburgh, were first with Ariel, Rufus, Blue Cloud, Ajax, a seedling, Joy, Trentham Purple, Sylvia, Mary Gilbert, Emperor, Ada Adair, Jeffrey's White,

Archic Grant, Gipsy's Bride, Brilliant, The Mearns, Charmer, Jimmie Donaldson, Duchess of Fife, Favourite, Countess of Kintore, H. M. Stanley, Stricta argentea, and Dawn of Day. Mr. J. Smellie was second with some fine varieties including Cherry Park, a very beautiful soft lilac flower of good substance. Mr. J. Forbes, Hawick, was third.

In the class open to gardeners Mr. A. Borrowman, Beeslack, won the Jubilee Medal for best eighteen Show Pansies; second, Mr. A. Reid, Urie; third, Mr. A. Hay, Linlithgow. Mr. H. Borrowman was also first for twelve and six Shows. Mr. J. Lyon, Blantyre, won the Jubilee Medal for eighteen Fancies, and the first for twelve Fancies, Mr. A. Hay being second for eighteen, and Mr. A. Borrowman for the twelve. Mr. A. Borrowman was first for the best six Fancy Pansies; second, Mr. J. Lyon. For twelve bunches bedding Violas Mr. A. Gilchrist, Glazert Bank, Lennoxton, was first with a fine stand; second, Mr. A. Hay; third, Mr. A. Borrowman. In open class Mr. C. Kay won the Jubilee Medal for twenty-four new Fancy varieties of 1894, or not yet sent out. The best Fancy Pansy was shown by Mr. C. Kay, who had Bernard Doulton; best Show seedling, first Mr. A. Lister with Miss Hall. A first-class certificate was awarded to the seedling Fancy, George Scott. Messrs. Dicksons & Co. exhibited a fine collection of Violas, not for competition; and Mr. M. Cuthbertson, Rothesay, a stand of hardy flowers, for which a special award was made. The classes provided for amateurs were also well filled.—S. A.

SOUTHERN PINK SOCIETY.

OWING to the bad weather the principal part of the Show of this Society had to be postponed for a fortnight, and was thus held on June 26th at the Drill Hall, Westminster, when laced Pinks were well exhibited by a limited number of growers. The prizewinners in the principal classes are given below, but space will not permit of a detailed report being given.

For twelve laced Pinks, distinct, Mr. Charles Turner, Royal Nurseries, Slough, was a good first with large, well finished blooms. The second prize was accorded to Mr. Fred. Hooper, Widcombe Hill, Bath; the third to Mr. B. Ladhams, Shirley, Southampton. In the class for twelve laced blooms, in not less than six varieties, the same order was maintained as in the previously named class; as was also the case in the classes for six distinct and six in three varieties, each being for laced flowers. The same exhibitors divided the honours in the various classes for single blooms, some charming examples being shown.

The premier red-laced Pink in the Show was Boiard, staged by Mr. Charles Turner. The competition in the classes for border Pinks was not very keen, the prizes being mainly divided between Messrs. R. Dean, Ealing; Fred Hooper, Bath; and B. Ladhams, Shirley.

Mr. B. Ladhams sent a collection of Pinks "not for competition," as also did Mr. Fred. Hooper.



FRUIT FORCING.

Vines.—*Early Houses.*—The Vines from which the Grapes have been cut must be well syringed every evening until thoroughly freed from red spider, and afterwards occasionally to preserve the old foliage as long as possible in a healthy condition, for when the leaves die early from red spider or other cause second growth not unfrequently sets in when Vines ought to be going to rest. Admit air to the fullest extent possible, and maintain a moderate degree of moisture in the border, particularly at the surface, so as to keep the roots there instead of allowing it to become dry, and so causing them to descend in quest of moisture. A moderate extension of the laterals will not do any harm, but irregularities of growth, and particularly gross ones, should be checked by pinching or be entirely removed.

Grapes Ripening.—A fair amount of atmospheric moisture should be maintained both for the benefit of the foliage and the swelling of the fruit, which enlarges considerably during the ripening process. Give the inside borders, and outside as well if the weather be dry, a good soaking of tepid water or liquid manure, and mulch at once with some rather dry but short, sweet litter about 2 inches thick. This will mostly be sufficient for perfecting the Grapes, but the Vines must not suffer from drought at the roots or the berries will be liable, especially Muscats, to shrivel. Directly they begin to colour afford abundance of air, a little fire heat being essential to their higher perfection, especially in flavour, insuring a circulation of warm air, but allow the temperature to fall to 65° at night, otherwise securing by artificial means a temperature of 70° to 75°, and 80° to 85° through the day for Black Hamburgs and similar varieties. Muscats should have a night temperature of 70° to 75°, 80° to 85° by day up to 90°, or 95° from sun heat.

Grapes Stoning.—The weather recently has been favourable for scorching and scalding. The best means of preventing both is a rather

high night temperature, early and free ventilation by day, with a little at night. It is not advisable to close early at this critical period—the close of the stoning process—but do so carefully, and as the liability to scalding does not extend over more than a fortnight to three weeks, particular attention should be given to ventilation. If very bright weather succeeds a dull moist period, a slight shade over the roof lights is very beneficial. A double thickness of herring nets will afford all the shade required, and it is necessary where the panes of glass are large, especially for Muscats just completing the stoning process.

Late Houses.—*Thinning.*—In order to secure large and highly finished berries thin them well, especially in the interior of the bunches, leaving the large-berried varieties about an inch apart. Only such varieties as Gros Colman, and with the Vines in the best condition, will bear this severe thinning, therefore regard must be had to the variety, its likely ultimate size and other circumstances, being guided by experience. The oval-berried varieties do not require so much room as the round ones, but all should be so thinned that they will have space for swelling fully without wedging, and yet be so close that when cut the bunch will retain its form. Loose bunches that show the footstalks are not so pleasing in appearance as more compact bunches, however fine the berries may be. Not only is it necessary to thin the berries, but the bunches must be reduced to the number which their size and the condition of the Vines satisfy the grower will finish satisfactorily. If an error is made, let it be on the safe side, as Vines that are overburdened never finish their fruit well, and it is inferior in keeping qualities.

Firing and Ventilating.—It is one of the greatest mistakes to rely on solar heat alone for forwarding late Grapes. Cold nights render fires necessary, it is folly to let them out now and have to fire hard later on when the sun has less power to ripen the fruit. All late Grapes thrive best in a high temperature, with abundant food at the roots and a genial condition in the atmosphere. Maintain a night temperature of 65°, and 70° to 75° by day in dull weather. Admit air early, a little at the top of the house constantly, increasing the ventilation with the temperature, allowing an advance to 85° or 90°, at which keep through the day from sun heat, reducing the ventilation with the declining sun. Close at 85°, damping the paths then, and again before nightfall. It is well to close for a short time and afterwards admit a little air, which will prevent a vitiated atmosphere and allow the foliage to dry in the morning by the time the sun acts powerfully. Avoid cold draughts or sudden depressions of temperature, as they cause rust.

THE KITCHEN GARDEN.

Celery.—If the trenches have been prepared some time since it will be possible to put the plants in these. Water the soil in the trenches if at all dry, also that in which the plants are growing a few hours prior to moving them. Not much is gained by planting double lines in a trench, as nearly as many plants can be grown in a single row. If extra fine "sticks" are required then dispose the plants 10 inches to 12 inches, but good serviceable Celery can be had by planting 6 inches to 8 inches apart in the rows. Where space is limited the plan of growing Celery in beds is to be commended. Dig a trench about 5 feet wide and from 8 inches to 10 inches deep, very lightly fork in a heavy dressing of solid manure, and on this dispose a little of the surface soil. Such a bed would hold four rows of plants 8 inches asunder in the rows. They must be planted very squarely, or otherwise moulding up will be a difficult matter. Celery on raised beds should be kept well supplied with water and liquid manure, and be prevented opening badly. Commence bandaging with brown paper fully six weeks before the best are wanted for shows.

Leeks.—Those persons who want these extra fine and early will have already grown their plants to a fairly large size, and ought now to stimulate growth by occasional soakings of liquid manure. Blanching to be effected by means of paper bandages or collars in preference to moulding up, and this may be commenced before the plants have attained their full size. For ordinary purposes Leeks succeed well on a well manured, deeply dug, outside border, even if this does face northwards. When the plants in the open ground seed beds are about 8 inches high moisten the soil, and then draw the strongest. Lightly shorten the leaves, and then drop them singly into holes 1 foot apart each way, and formed 6 inches deep with a stout dibber. Little or no fixing of soil about the roots should be attempted, as the holes must not be tightly closed. A watering will usually wash enough soil down to the roots.

Late Peas.—What are sometimes intended to produce late crops not unfrequently come into bearing prematurely. In very hot weather this cannot well be prevented, but much may be done towards preventing premature flowering by means of a heavy mulching of strawy manure and repeated thorough soakings of water. If the roots and surroundings can be kept cool and moist that is a good preventive of mildew, as well as light and early cropping. Especially ought those rows now only coming through the ground or requiring staking to be well looked after. If they become dry at the roots when in quite a young state it is not to be expected that they will thrive. It is not yet too late to sow such late mildew-resisting varieties as Ne Plus Ultra, Latest of All, and Reading Giant—at any rate, as far as the more southern counties are concerned. If the second early wrinkled Marrows and the early round-seeded varieties are sown much before the second week in July, they will be cropping before late in October and during November. The flat ridges between widely disposed Celery trenches answer well for late

Peas. For the taller varieties of the latter a width of 6 feet is desirable.

Young Carrots.—These are always appreciated, and if sowings of Horn varieties or even intermediate and late varieties are made before June is past, and again three weeks later, very serviceable young Carrots should be available in the autumn, and probably through the winter. A somewhat sandy or other free-working soil best suits these crops. Open shallow drills 8 inches apart, give a gentle watering if at all dry, and sow the seeds moderately freely. Carrot and other grubs are troublesome in the case of these late crops, but may be checked considerably by dusting wood ashes along the drills with the seeds. Avoid overdoing this though, as wood ashes that have not been drenched by rain are very strong.

Parsley.—It is well to err on the right side with regard to Parsley, that is to say, it is better to have too much than too little. When raised early and grown strongly the most improved strains are not sufficiently frost-resisting. By sowing more seeds at once and thinning early there is every likelihood of these late raised rows standing severe frosts better than the much older and stronger plants. It sometimes happens that the very slight protection afforded by fruit trees will be sufficient to save Parsley from a severe frost, and seeing that transplanting can be done in almost any weather at this time of year. Some of the thinnings from the early sown rows or beds might well be transferred to the shelter of fruit trees alongside pathways or elsewhere. Water the ground before carefully easing the plants out of it, also the new site for them, if at all dry, and again after planting.

THE BEE-KEEPER.

APIARIAN NOTES.

I DISCONTINUED feeding my bees on the 21st, but shall apparently have to resume it as the weather continues wet and cold. In 1893 at this date my prime swarms of May had swarmed again, and second and third swarms were in good condition. On the 7th of July the Clover yield was complete, and the last week of August finished it for the year. Ten months since bees had a good honey day, and our only hope rests with the next two months. This year, at the end of June, we have not had a swarm, and not for a single day have bees gathered a surplus. From nearly every quarter in Scotland the cry is the same, exceptions being on the Firth of Clyde and Lochlomond side. At the former place a surplus of honey is in supers, the cause of this being the higher temperature than further inland, and the effects of the sea breeze in warding off frosts, preserving flowers from injury.

But few days pass without my having some visitors. One of these, an old teacher, named Mr. Waddell, chatting over the two-queens-in-one-hive system, queried, "How long is it since I had my first frame hives from you? It is more than thirty years since, and I have them yet." I replied, "The wood that the hives were made of at that time was of superior quality from what is now used. Time has revealed facts, as it is doing in the two-queens-in-one-hive system, first announced in *Journal of Horticulture*."

STORING OF HONEY.

I wish now to supplement the article in the *Journal* of June 7th, where I showed the difference of the in-gathering of honey relative to the different strength of colonies. I showed the smallest hive to be insufficient for the half of the eggs a queen bee deposits; but no allowance was made for temporary storing of honey as the bees bring it from the fields. According to the modern idea bees empty their newly gathered honey from their sacs into cells in the body of the hive, then carry it up to the supers at night. Honey so stored occupies about three times the space as sealed honey does. A moderate sized colony of bees gathers from 5 lbs. and upwards per day in fine weather. Sixteen inches constitute about the average size of a pound of sealed honey, which brings the space required at this low estimate to three frames, thus reducing the brood nest to about five frames.

In 1876 I had a hive which took possession and stored honey in combs nearly 3 feet from their hive. The idea that bees require first to store their honey in the body of the hive then carry it to the supers is absurd. Still more unreasonable is the idea that all the honey carried in by the bees has to be fed to young bees for them to dispose of it. One writer goes so far as to say that he has watched them do this "thousands of times;" but does that witness know whether it was honey or water the bees transmitted to their younger sisters, which, according to the same writer, live forty days only? My experience given in the foregoing answers the argument in this case equally as strong as in the former as being absurd and as untenable. Yet these assertions come from the pens of selected teachers of bee-husbandry.—A LANARKSHIRE BEE-KEEPER.



TO CORRESPONDENTS

*All correspondence should be directed either to "THE EDITOR" or to "THE PUBLISHER." Letters addressed to Dr. Hogg or members of the staff often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post, and we do not undertake to return rejected communications.

Sulphur on Vines (Delta).—When the sulphur has remained on the leaves long enough to destroy the mildew it may be washed off as you propose.

Chimonanthus fragrans Seeding (C. O.).—Yes, the plant frequently produces seed pods. For reply to your other question see "Names of Plants."

Tea Roses for Standards (F. M.).—There was an accidental omission in the reply on page 508 last week. The answer was intended to convey the experience of more than one Rose grower that the varieties named usually do better as standards than dwarfs.

Seedling Pinks (D. B.).—The flowers show a considerable enlargement in size compared with those of the parent, and they are fragrant; but the split pod on each one is a defective point. Roses are florists' flowers, which can be only named by comparison with flowers at a show or in a nursery.

Grapes Scalded (Foreman).—The samples arrive as we are preparing for press. It is a serious case of scalding, and we can only refer you to our reply to "X. Y. Z." on page 509, last week, as to contributory causes, apart from the removal of leaves. The night temperature has been too low at a critical time.

Treatise on Mushrooms (P. M., New York).—We suspect there are not many persons acquainted with the subject who would hesitate to describe Wright's seventh edition of "Mushrooms for the Million," recently issued, as the most comprehensive and useful manual on the subject on which it treats. It is sent to the United States for 1s. 3d., post free, from this office.

Apricot Branches Dying (Yorkshire).—The dying of the branches is an ancient grievance, and a modern one, too, we fear. It is caused by gumming, and most difficult, if not impossible, to prevent in the case of old trees, if not in young ones. The fruits falling from the other parts of the tree may be partly the result of a chill through a frosty night, and partly the result of a lack of nutrition. More copious supplies of sewage might benefit the tree.

Irises for Market Purposes (Subscriber).—Flag Irises are among the most popular, in a cut state. Some of the best of these are Germanica, the blue Flag; Albicans (syn. Princess of Wales), pure white; Gracchus, primrose and white; Darius, chrome yellow and lilac; Hector, sulphureous yellow and velvety crimson; Purple King, purple; Fairy Queen, lavender and violet; Mons. Cherwin, old gold and brown, reticulated white; Ada, and Mrs. H. Darwin. Spanish Irises are not less serviceable in a cut state, and good varieties of these are Blanchard, Antonia Johanna, La Dame Blanche, Leander, and Prince of Orange. Varieties in mixture, however, are cheaper to purchase in the form of bulbs, and flower buyers in markets do not trouble themselves about the names of varieties. English Irises are also beautiful, and form a natural succession to the Spanish.

"Drooping" Disease in Tomatoes (Echo).—In a thorough examination of your plant we found no pronounced disease. The roots were quite clean and healthy, free from nodules, excrescences, and root-knots. On the root-stem and at the part where the radicle or tap root had assumed the fibrous formation we found "canker," which had destroyed the bark, quite encircling the part affected and causing the destruction of the cambial layers, also the underlying woody tissue. In this there were some mycelial threads, possibly those of the Potato disease fungus (*Phytophthora infestans*), but that is not by any means certain, as there were no outgrowths, "fruits" or reproductive bodies, and could not produce the canker. This yielded, in an alcoholic solution, a vast number of minute bodies or spores, which belong to the Myxomycetes or family of slime fungi. There was, however, no "slime," nor any abnormal swelling of the tissues or cells, or any ferment, such as usually accompanies attacks of Schizomycetes (bacteria). This condition may have been due to the disease being only in the initiatory stage, and could only be determined by examination of a plant which had succumbed or was succumbing to it in acute form. The stem of the

plant above ground showed no signs of disease, and the fruits were quite clean and normal. The leaves were in some parts affected with "browning"—that is, they were dark brown or blackened, "drooping," and the tissue destroyed. This part had a clammy "feel," such as indicates the presence of Plasmodiophora, or slime fungus, but we were unable to detect anything beyond the disruption of the tissues or cells, which were not abnormally large, and the adjacent cells merely showed traces of discolouration. The examination leads to the deduction that the "drooping" is occasioned by "browning," and is caused by a fungus similar to that producing "browning" in Vines (see page 519). If not the same it is an allied species of Plasmodiophora, which for the sake of distinction may be called *P. lycopersici*, though it also attacks Potatoes and causes the leaflets to wither and the tubers to be comparatively small, but perfectly free from disease. The fungus is unquestionably introduced with the soil or manure, as it has a great liking for decaying organic matter, and, though mainly a saprophyte, has been found in living tissues, the contents of which it speedily appropriates. Your soil seems of a vegetable or rather warpy nature; it certainly is alluvial, and needs lime. This is the best antidote to Plasmodiophora, therefore we advise your giving the plants a dressing of quicklime, fresh slaked, but cool, not using less nor much more than a peck per rod, and washing it in at once moderately. In future seasons we advise mixing one-tenth part of quicklime with the soil about a month or six weeks before using it for the plants. Cut away all the "drooping" leaves and parts of the plants and burn them. This should be done early, and be followed up as required. Under that routine the plants will generally grow out of the disease, or it will not prejudice the perfecting of the crop, though it will reduce the number and size of the fruit.

Tomatoes in a Greenhouse (*E. C. W.*).—You do not say whether the plants are in pots or planted out; but ask what heat, what air, what water, and what manure they require? Heat—anything above 55° at night, up to 90° with sun and full ventilation. Air—leave the top ventilators open an inch or two all night, the front sashes, too, in warm weather, and increase the ventilation as soon as the sun raises the temperature in the morning. They cannot have too much air during hot weather. Water—as often as the soil becomes dry enough to cause the leaves to feel a little limp, give enough water to soak right down to the drainage. So long as the soil remains moist and the leaves fresh give no water. Manure—give none till a good crop of fruit is set, then cover the soil 2 inches thick with partially decayed stable manure. The waterings will wash its virtues to the roots. Fumigate, or dredge with tobacco powder to destroy the green fly. Healthy plants are seldom troubled with this pest. Besides a free circulation of air Tomatoes cannot have too much sun; they do not succeed in shaded positions. Send 1s. 1½d. to the publisher for Iggulden's "Tomato Manual," and you will find a hundred times more information than can be given in reply to a letter.

The Apricot Weevil (*C. Jones*).—The name of the glossy black weevil is *Otiorhynchus tenebrius*. It is an enemy to fruit trees that are trained against the wall, the Apricot being the greatest sufferer from its attacks. Vines also are much damaged by this beetle, the larva of which lurks at the roots, and does infinite damage, though unseen. The perfect insect is fond of hiding in the crevices found so commonly in old walls, and finds a congenial resting-place beneath the rough bark of the Grape Vine. An authority, whose experience on such subjects is well known, advises that where the wall-fruit fails from no apparent cause, every chink in the wall should be stopped with cement, plaster of Paris, or mortar—the first-mentioned substance being most effectual—and that the rough bark of the Vine should be stripped off in the early spring. Whitewash, also, should be liberally used in the interior of hot-houses and greenhouses; and in October the earth round the roots should be removed, and a diligent search made after the beetle, so as to prevent it laying its eggs. These minutiae are somewhat tedious, but the gardener will be well rewarded by the improved condition of his fruit trees. If the beetle should be found lurking along the base of the wall, it will be advisable to lay salt thickly along the wall, as the insects are killed almost instantaneously when they come into contact with that substance. Strong tobacco water poured along the base of the wall will have the same effect, and infusions of aloes and quassia are useful.

Narcissi and Tulips (*T. J.*).—The Polyanthus Narcissi are the best for early forcing—notably, Paper White and Double Roman White. Cheapness is also a consideration in favour of the two varieties named. Other Polyanthus forms sometimes grown in pots are Grand Monarque, white and yellow; Staten General, white and citron yellow; and Gloriosa, white and orange. Daffodils are extensively grown under glass, but are not hard forced. Some of the cheapest and most largely cultivated are Biflorus, white, yellow cup; Cynosure, primrose white, orange scarlet cup; Golden Spur, clear yellow; Horsfieldi, white, pale yellow trumpet; and Incomparabilis, single and double. Both the Polyanthus varieties and Daffodils named succeed well planted out, and to these may well be added the single and double English Daffodils, Orange Phoenix, Poeticus, Poeticus ornatus, and the old Double White Narcissus. Of Tulips, the earliest to flower in pots or outdoors are Duc Van Thol varieties. To succeed these, such good single varieties as Bacchus, Couleur Ponceau, Duchesse de Parma, Joost Van Vondel, La Reine, Vermilion Brilliant (one of the best), L'Immacule, and Yellow Prince. Double Tulips also thrive well in pots, and Duc Van Thol may be forced moderately hard. To follow these grow Tournesol, Yellow Tournesol, La Candeur, Rex Rubrorum, Blancborde pourpre, and Duke of York. These again may be planted out.

Peaches Rusted (*F. L.*).—The fruits are badly "rusted" in places, also cracked in the oldest affected parts, and in others covered with the dense felt-like coat of *Sphaerotheca pannosa*, a mildew of frequent occurrence in this form on the Peach. It forms a greyish coat over the parts affected, living on the outer surface of the cells of the fruit. The discoloured blotches are probably caused by wet lodging on the fruit, and may have been accelerated by the syringing with softsoap, which may also have had a deterrent effect on the mildew. The affected fruits will crack more or less as they increase in size, and the best plan would be to remove and burn them. The disease, however, may be arrested by rubbing flowers of sulphur gently on the affected fruits, but it will not restore the epidermal tissues, and the fruits will be so cracked or furrowed as to be worthless for table.

Names of Plants.—We only undertake to name species of plants, not varieties that have originated from seed and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in firm boxes. Slightly damp moss, soft green grass or leaves form the best packing, dry wool the worst. Not more than six specimens can be named at once, and the numbers should be visible without untying the ligatures, it being often difficult to separate them when the paper is damp. (*T. R. S.*).—Our receiving clerk paid 2d. overweight postage on the box. Please remit, and the specimens will be attended to. (*C. O.*).—*Gladiolus hyzanthinus*. (*J. A.*).—1, *Orchis apifera* (Bee Orchid); 2, *Cotoneaster affinis*; 3, *Cratægus Douglasi*; 4, *Spiræa canescens*; 5, *S. Aruncus*; 6, *Campanula dahurica*. (*C. B.*).—*Colletia spinosa*. (*W. H. D.*).—The paper box was flattened in the post. We can only recognise the following:—1, *Muscari botryoides alba*; 2, *Auchusa* (?); 4, *Oxalis pedunculata*; 5, *Saxifraga pectinata*.

COVENT GARDEN MARKET.—JUNE 27TH

MARKET getting busy with heavy supplies, Peaches and Nectarines being a glut. Prices unaltered.

FRUIT.

	s.	d.	s.	d.		s.	d.	s.	d.
Apples, Tasmania, per case	8	0	12	0	Peaches, per doz.	1	0	8	0
Grapes, per lb.	1	0	3	0	St. Michael Pines, each	2	0	6	0
Lemons, case	10	0	15	0	Strawberries per lb.	0	6	1	6

VEGETABLES.

	s.	d.	s.	d.		s.	d.	s.	d.
Asparagus, per bundle	1	6	3	6	Mushrooms, punnet	0	9	1	0
Beans, Kidney, per lb.	0	6	0	9	Mustard and Cress, punnet	0	2	0	0
Bect, Red, dozen	1	0	0	0	Onions, bushel	3	6	4	0
Carrots, bunch	0	3	0	4	Parsley, dozen bunches	2	0	3	0
new, bunch	0	9	1	0	Parsnips, dozen	1	0	0	0
Caniflowers, dozen	1	6	3	0	Potatoes, per cwt.	2	0	4	6
Celery, bundle	1	0	1	3	Salsafy, bundle	1	0	1	5
Coleworts, dozen bunches	2	0	4	0	Scorzonera, bundle	1	6	0	0
Cucumbers, dozen	1	6	3	0	Shallots, per lb.	0	3	0	0
Endive, dozen	1	3	1	6	Spinach, bushel	1	6	3	0
Herbs, bunch	0	3	0	0	Tomatoes, per lb.	0	4	0	8
Leeks, bunch	0	2	0	0	Turnips, bunch	0	3	0	4
Lettuce, dozen	0	9	1	0	new, bunch	0	8	0	10

AVERAGE WHOLESALE PRICES.—OUT FLOWERS.

Orchid Blooms in variety.							
	s.	d.	s.	d.		s.	d.
Arum Lilies, 12 blooms	1	6	3	0	Orchids, per dozen blooms	1	0
Bouvardias, bunch	0	6	1	0	Pæonies, dozen bunches	10	0
Carnations, 12 blooms	0	9	1	6	Pansies, dozen bunches	1	0
doz. bunches	4	0	6	0	Pelargoniums, 12 bunches	6	0
Corndowers, doz. bunches	1	0	2	0	Pelargoniums, scarlet, doz.	3	0
Encharis, dozen	2	0	4	0	bunches	0	9
Gardenias, per dozen	1	0	4	0	Pinks various, doz. bunches	1	0
Gladiolus, dozen bunches	1	6	5	0	Poppies, various, dozen	0	9
Iris, dozen blooms	0	6	1	6	bunches	0	9
Lilac (French) per bunch	3	0	5	0	Primula (double), dozen	0	6
Lily of Valley, doz. sprays	1	0	1	6	sprays	0	6
Lilium candidum, dozen	12	0	18	0	Pyrethrum, dozen bunches	3	0
bunches	0	6	0	9	Ranunculus, doz. bunches	2	0
Lilium longiflorum, per doz.	2	0	4	0	Roses (indoor), dozen	0	6
Maidenhair Fern, dozen	4	0	6	0	(outdoor), doz. bunches	4	0
Marguerites, 12 bunches	1	6	4	0	Tea, white, dozen	1	0
Moss Roses (English), doz.	6	0	12	0	Yellow, dozen	2	0
Myosotis or Forget-me-nots, dozen bunches	1	6	2	0	Roses (French), per dozen	0	6
Mignonette, 12 bunches	3	0	6	0	Roses, Safrano (English), per dozen	1	0

PLANTS IN POTS.

	s.	d.	s.	d.		s.	d.	s.	d.
Arbor Vitæ (golden) dozen	6	0	12	0	Hydrangea, per dozen	9	0	18	0
Arum Lilies, per dozen	6	0	12	0	Ivy Geraniums	4	0	6	0
Aspidistra, per dozen	18	0	36	0	Lilium Harrisii, per dozen	15	0	30	0
Aspidistra, specimen plant	5	0	10	6	Lobelia, per dozen	4	0	6	0
Calceolarias, dozen pots	4	0	8	0	Lycopodiums, per dozen	3	0	4	0
Cineraria, per dozen	4	0	6	0	Marguerite Daisy, dozen	6	0	12	0
Dracæna terminalis, per dozen	18	0	42	0	yellow, doz. pots	6	0	18	0
Dracæna viridis, dozen	9	0	24	0	Mignonette, per doz.	4	0	8	0
Ericas, per dozen	9	0	24	0	Musk, per dozen	2	0	4	0
Euonymus, var., dozen	6	0	18	0	Myrtles, dozen	6	0	9	0
Evergreens, in var., dozen	6	0	24	0	Nasturtiums, per dozen	1	6	6	0
Ferns, in variety, dozen	4	0	12	0	Palms, in var. each	1	0	15	0
(small) per hundred	4	0	8	0	(specimens)	21	0	63	0
Ficus elastica, each	1	0	7	6	Pelargoniums, per dozen	6	0	15	0
Foliage plants, var., each	2	0	10	0	scarlet, per doz.	3	0	6	0
Fuchsia, per dozen	4	0	8	0	Roses (Fairy), per dozen	6	0	9	0
Heliotrope, per dozen	5	0	8	0	Spiræas, per dozen	6	0	12	0
					Stocks, per dozen	3	6	5	0

Roots in variety for planting out in boxes or by the dozen.



CHANGING AGRICULTURE.

MANY and foolish have been the suggestions for dealing with the agricultural depression in Essex, which the Commissioners' Report has called forth. A model farm, a general cleaning and restoring the land to fertility, schools for agriculture—all by the Government—are among the unwise measures recommended by those who write with little if any practical knowledge of the subject. Few persons outside Essex have anything like a clear conception of what the heavy clays of that county are like—how tenacious they are; how impervious to anything like useful water filtration they are; how the wet land, broken up to bright sunshine, becomes hard as paving stones, or how much of the grass land becomes so sodden during winter as to be little better than a swamp till it dries by evaporation in spring.

The Scotch farmers appear to have adopted, or rather initiated, a safe system of cultivation. According to Mr. McConnell they avoided bare fallows. Said he, "We simply plough properly, manure heavily, grow good crops, lay the land down to grass, and there is no further trouble." Even in corn growing he tells of a striking improvement—how Wheat crops, which at first averaged only 3 quarters an acre, soon rose to 4½ and 5 quarters, and how there was a still greater improvement in Oats, which improvement was attributed solely to muck applied to fields which never had a dressing before, at any rate during the present generation. He tells also of the action of gaslime in ameliorating the soil. "We use immense quantities of the spent lime from the London gas-works, which we get at the cost of carriage. It is applied in various ways, and many are foolish enough to use it without manure. Some mix it with earth for compost for top-dressings and some apply it to fallows. We prefer to apply it raw, at the rate of from 4 to 6 tons per acre in autumn, to the lea land that is to be ploughed up during the winter. By this means all 'grubs' are killed, the turf is partly killed, the soil is made more friable, while, of course, the natural fertility is stimulated. By itself I have seen it act on a crop as strongly as nitrate of soda, but the soil must be fed along with it. Its effect upon the mechanical texture is wonderful. I remember one case of a field that was partly dressed and partly left undressed with it, and in broadcasting the seed afterwards I could feel the difference in the soil in stepping from the one part to the other every time I went up and down the stretches, because the limed part was so much more loose and friable." A fresh dressing is applied about every sixth year to that portion of the temporary pasture or lea land which comes in rotation for ploughing, preference being given to the blue lime as the more poisonous, and, therefore, more powerful in action. By applying it in autumn its poisonous sulphites are oxidised long before the crop is sown.

The satisfactory results from a regular periodical use of gaslime show that in conjunction with a system of shallow drainage, say 30 inches deep and 16 feet apart, the condition of the land might be much improved. The profitable use of manure would then become a mere matter of detail. Under the Scotch system one-sixth or one-eighth of a farm is limed and ploughed each year, the whole of the remainder being down to temporary pasture. Under the old system only about one-fifteenth part of the farm was in permanent pasture, nearly the whole of the remainder being ploughed every year. Though both may be

regarded as extreme systems, that of the Scotch farmer is safe, economical, and profitable, in all which points the old system has long been known to be deficient. The folly of persistence in it has been equally obvious. Wheat growing at a profit has been and is impossible under it, so too is Oat culture. But we have no doubt that under a thorough system of combined drainage, mechanical division, and sustained fertility of soil Oat growing might be rendered more profitable than it ever has been. Take the latest quotations of 27s. per quarter for best English Oats, take the possible average crop of 10 quarters an acre, and we have a total value per acre for grain alone of £13 10s. We need not dilate upon the feeding value of Oat straw. For temporary pasture the coarser Grasses and Clovers are best. We should also like to see very much more Lucerne in cultivation on such land. It is certain this year to give four full crops, and last year it was even more, or rather altogether more valuable, from its power to resist drought by sending its roots so deep down into the soil.

WORK ON THE HOME FARM.

We have seen haymaking in full swing in the home counties, and as far north as South Leicestershire. Very soon will it become general, with the exception of poor pasture, where the hay crop is always late. This year it will be later than ever, because stock was kept upon it so late in spring. Where the hay can be had now an abundant aftermath is a certainty, alternating rain and sunshine causing herbage to grow with marvellous rapidity. The few bright days we have had have been turned to account for using both horse and hand hoes, as plant-singling of both root and green crops had been pushed on, an agreeable change in the aspect of such crops followed the hoeing. There stands the plant, sturdy and full of growth, on clean land; a full strong plant it is, too, free from blight or damage from insect pest of any sort.

Often have we gone through the haymaking without making a single haycock. It is altogether a matter of locality and weather. If the weather is unsettled the hay should always be placed in cock as quickly as possible; if fine and settled weather prevails, then let the tedder follow the mower at once, and afterwards at frequent intervals. By judicious management of back and front action of the tedder, as is necessary in conjunction with horse rakes, labour is much reduced, and the hay is soon ready for carting. Consider well ways and means, do not get more grass mown than can be well dealt with. An able man with a good machine and sufficient relays of horses can mow 10 acres daily after day, but to do this well he must have knives sharpened and changed for him, horses changed, and everything else done so that he may give his whole time and attention to the mowing. See that he is well supplied with oil for the machine, and always have an extra connecting rod at hand for each machine. Close attention to all such matters of detail does much to ensure dispatch in the work and to prevent those long delays which are so serious when the weather is favourable for the work.

METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude, 111 feet.

DATE.		9 A.M.					IN THE DAY.				Rain.
		Barometer at 32° and Sea Level.	Hygrometer.		Direc- tion of Wind.	Temp. of soil at 1 foot.	Shade Tem- perature.		Radiation Temperature		
			Dry.	Wet.			Max.	Min.	In Sun.	On Grass.	
1894.		Inchs.	deg.	deg.		deg.	deg.	deg.	deg.	Inchs.	
June.											
Sunday ..	17	30.000	59.8	55.0	S.	57.9	68.6	50.7	107.1	47.2	0.026
Monday ..	18	29.811	60.0	52.6	N.W.	57.3	62.9	50.3	101.9	46.2	0.053
Tuesday ..	19	30.111	58.2	51.7	N.W.	56.2	66.9	47.4	111.8	44.0	—
Wednesday	20	30.027	58.8	55.9	S.W.	54.9	62.9	53.0	100.6	49.9	0.166
Thursday ..	21	30.199	61.4	54.2	N.W.	56.2	73.9	48.2	117.0	42.9	—
Friday ..	22	30.162	60.6	58.1	S.E.	57.9	74.1	50.4	121.9	46.0	—
Saturday ..	23	30.025	67.8	65.1	S.W.	58.9	72.8	57.7	122.4	53.4	—
		30.048	60.9	56.1		57.3	68.9	51.1	111.8	47.1	0.245

REMARKS.

- 17th.—Sunny morning; overcast afternoon; slight showers in evening.
 18th.—Some sunshine early; overcast from 10 A.M., spots of rain at 11 A.M. and frequent showers in afternoon and evening.
 19th.—Fine and pleasant throughout, but not much bright sun after 11 A.M.
 20th.—Overcast morning; continuous rain from 1.30 P.M. to 4.15 P.M.; fine evening.
 21st.—Almost cloudless early, and unbroken sunshine throughout.
 22nd.—Overcast early; occasional sunshine in morning, and bright sunshine almost all afternoon.
 23rd.—Fine and generally sunny morning; frequently cloudy in afternoon, and overcast after 5 P.M.

Rather warmer and finer, but temperature still slightly below the average.—
 G. J. SYMONS.

